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ERRATA.

Page.	Line.				
59	4	for	Tasaveri	read	Tasawuf.
—	15	for	Rungha	—	Runjha.
—	19	for	Kuth	—	Kutb.
60	17	for	Darwaza	—	Darweza.
61	28	for	“ to ”	—	“ ts ”
62	8	for	बाह	—	बाहु.
65	5	for	birār	—	birāz.
66	34	for	cheighuzah	—	Chelghuzah.
67	19	for	وعدہ	—	جذع
—	26	for	S. M.	—	Sig.
84	9	for	Tatkhi	—	Jatkhi.
—	12	for	Thang	—	Jhang.
85	6	for	Bhurplat	—	Bhurphat.
—	14	for	Goths	—	Geths.
86	16	for	Tulaykhā	—	Zulaykhā.
—	19	for	Puornun	—	Punnun.
88	17	for	Suryam	—	Suryani.
78	6	for	Γ	—	T.
—	13	for	A	—	A.
88	9	for	HA	—	H.A.
153	22	for	too	—	no.
154	11	for	thy	—	this.

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JANUARY, 1849.

ART. I.—*THE STORY OF TUKA'RA'MA. From the Maráthí-Prákrit. With an Introduction.* BY THE REV. J. MURRAY MITCHELL.

INTRODUCTION.

The literature of the Maráthá people cannot boast of great antiquity, extent, or originality; nevertheless, it is possessed of several interesting features. One of these is the influence it still exercises over the popular mind. It may fairly be denominated a living literature; for, although exceedingly few original compositions of any consequence have been published by the Maráthás during this century, we possess abundant evidence in the large editions of older Maráthí works which have been issuing for six or seven years past from the native press in Bombay and elsewhere, that the mass of the nation is still powerfully affected by the indigenous authorship. The works now referred to are poetical compositions. The Maráthí country abounds with *bakhars*, or narratives of particular historical events, written in prose; but the popular taste has not called for the multiplication of these by means of the press. What is more remarkable, it has not called for the publication of another class of works—which exist in considerable numbers—approaching in character to those martial

poems of the Rajputs, of which Col. Tod has afforded such characteristic specimens. Considering the high military character of the Maráthá nation, it appears a remarkable circumstance that the works which have been issuing in large numbers from the native press, should be almost exclusively religious. It is singular enough, also, that on the subject of war* the more celebrated Maráthí writers should have scarcely touched,—abandoning the gallant exploits of their own nation from the days of S'ívajító those of Bájíráó, to the zeal of nameless versifiers. In most other countries, love and war have been the favourite themes of the poet; inasmuch as these are among the subjects that most deeply stir the human heart, they have been "his haunt and the main region of his song."—Again, although love enters into their reproductions of the Hindu mythology in much the same proportion as in the Puránas, we see exceedingly little of that natural style of portraiture, which charms us in the S'akuntalá or Damáyantí of the Sanskrit writers. A class of writings called *lívanyá* exists, and in these the subject of love is all in all,—unhappily, the passion in its most grossly sensual aspect;—still, although these disgusting compositions are but too familiarly known to the mass of the people, yet no one would venture to class their writers with the distinguished authors of Maháráshtra.

The most celebrated of the Maráthí poets is *Dnyánobá* or *Dnyánes'var*, whose work the *Dnyánes'vari*, a copious paraphrase in *Oví* measure of the Bhagavad-Gítá, is among the works lately issued from the native press in Bombay. The *Dnyánes'vari* is amongst the oldest, if not the very oldest, of Maráthí works; its date being the year of S'áliváhana 1212, which corresponds to A. D. 1290. The writer is always mentioned with high respect, and an almost idolatrous reverence is paid to copies of his work, which have been handed down from father to son in some Maráthí families of the middle class. But the phraseology of *Dnyánobá* is too antique, and his ideas are too refined, for the mass of the people fully to comprehend; and a professed follower and ardent admirer of *Dnyánobá* is now more generally known. I refer to *Tukárāma*, who may be called the poet of Maháráshtra, as emphatically as Burns has often been denominated the poet of Scotland.

* The name *पंजाब* is given to war-ballads. A good many of these exist in manuscript; many however have never been committed to writing at all. Within these few days I have taken down from the lips of a wandering rhapsodist, a ballad termed by him the *Malcolm Pawáda*, and detailing the exploits of Sir John Malcolm, which he says has never been written before.

The popularity of Tukárāma is certainly very great. The formula with which he invariably concludes his hymns (*abhangas**)-तुका हाणे (Tuká said)—is in the mouths of his admirers quite as frequently and with as much entireness of reliance on their master's authority, as we can conceive to have been the case with the famous *αὐτὸς ἔφα* of the Pythagoreans. His admirers constitute the great body of the middle and lower castes, and include a considerable portion of the highest. His writings may be viewed as partly the cause, and partly the effect, of the peculiar religious development of the Maráthá mind; and we possess in them a far better key to its interpretation, that could be furnished in the more ancient sacred books—the Vedas and Purānas.

The oral traditions of the life of Tukárāma are as numerous as the popularity of his writings would naturally lead us to expect. It might be interesting to analyse these, with a view to discover what proportion of them have been derived from strictly oral tradition, and how many have been drawn from written documents. I have collected a considerable number which seem generally traceable to the written narratives,—with which, on the whole, they tolerably well agree

The written documents in which the life of Tukárāma is contained, are the *Bhakta Lilámrita* and the *Bhakti Vijaya*. The former contains by far the fuller statement. It is a work written in Maráthi verse, consisting of 10,794 *ovya* (each *ovi* being longer than a *s'loka* of the *anushtubha* metre). It was composed by *Mahipati*, a Brahman resident at Táharábád, near the Godávari river, not far from the city of Paithan in the Dakhan, in the year of S'aliváhana 1696 [A. D. 1774].

According to the Author's statement, he first composed the *Bhakti Vijaya*, then a second work called *Santa Lilámrita Sára*, and lastly the *Bhakta Lilámrita*. It is of considerable importance to know from what sources be obtained the information which is embodied in these books. He mentions that the *Bhakti Vijaya* was drawn up from two other works, one by *Nábháji* and another was *Udhava-chidgun*.† The work of Nábháji, says our author, was written in the "Gwalior language." There can be little doubt of its being the same as the original *Bhakta*

* An *abhang* (derived from अ privative, and भङ्ग fracture,—*inviolata*) is an ill-defined species of religious composition, consisting of couplets which generally rhyme together. The lines may be from six to sixteen.

† *Bhakti Vijaya*, near the commencement.

Māla, to which Professor H. H. Wilson refers in his account of the "Religious Sects of the Hindus,"* and which he describes as being "composed by Nābhāji in a difficult dialect of Hindī, about 250 years ago." Our author in the *Bhakta Līlāmrita*, still follows Nābhāji, and apparently, oral tradition.† I have hitherto been unable to lay my hands on a copy of Nābhāji's work; but in all probability our author's narrative of Tukārāma's life has been drawn up solely from tradition. In the original work of Nābhāji it could not appear, for the simple but sufficient reason that he seems to have lived before Tukārāma.—Besides the above-mentioned works, a publication is sometimes referred to under the name of *Tukārāma Charitra*; but the copy of this which I procured with some difficulty, proved to be nothing more than a transcript of the account in the *Bhakta Līlāmrita*. That account, it will be admitted is sufficiently voluminous, even in the condensed form in which it is submitted below; and to it, in all probability, the whole bulk of the legendary lore now current respecting Tukārāma, is finally to be traced.

The date of Tukārāma's death (or, as our author would say, removal from earth) was the year of S'ālivāhana 1571 [A. D. 1649]. Between this and the date of the composition of the following history of his life, there intervenes a period of 125 years. The traditions regarding Tukārāma had then the ample space of a century and a quarter to develop and enlarge themselves before they were committed to writing; and in a soil so preëminently favourable to the growth of mythological systems as is supplied by the Indian mind, the original facts of the life of the Marāthī poet undoubtedly must, in that interval, have assumed a shape and magnitude widely different from what they originally possessed. In India perhaps more than in any other country—and most of all in matters connected with religion—Virgil's celebrated description of Rumour will hold good:

—Magnas it Fama per urbes;
Fama, malum quo non aliud velocius ullum;
Mobilitate viget, viresque acquirit eundo.
Parva metu primo, mox sese attollit in auras;
Ingrediturque solo, et caput inter nubila condit.

* Asiatic Researches; Vol. XVI. page 8.

† It is not quite clear whether our author consulted any written documents besides the work of Nābhāji, in composing the *Bhakta Līlāmrita*. Probably, however, he did not. Certainly he could have consulted no other work of any consequence, or he would have specified it.

How far the author of the Bhakta Lílāmrita may have altered or exaggerated the oral legends respecting Tukárāma, it is not now easy to decide. His account hangs wonderfully well together, and we cannot doubt that he must at all events have squared his materials so as best to suit his purpose, and make their various parts fit easily into each other ;—but very probably he did more than this, and deemed himself warranted to embellish with a lavish fancy the history of the boasted poet-saint of Mahārāshtra, who had arisen in late and evil days to emulate the virtues of the most illustrious worshippers of Vishnu.

My original object in consulting the written records of Tukárāma's life was to obtain some credible historical notices regarding a personage of so much consequence in the literature and history of Mahārāshtra ; and I had intended merely to draw up a brief summary of what might appear really historical in the account, purging it from the vast quantity of fabulous matter associated with it. But after a careful examination of the narrative in the Bhakta Lílāmrita, it has appeared desirable to give a fair full outline of the entire history. The presentation of the mythological part is necessary as an aid to the solution of a very interesting problem, which the perusal of this narrative suggests. In fact, what was originally the sole end in view in the compilation of this account of Tukárāma, has become quite a subordinate end. The purely historical matter contained in the following narrative might be condensed into forty or fifty lines ; nor would one be justified in crowding the pages of this journal with a mass of extravagant mythology, if the value of the materials consisted either solely or chiefly in those historical facts which, although interesting and important in themselves, will turn out to be rather few in number : *apparent rari nantes in gurgite vasto*. But there are other considerations which appear to demand that a full view be furnished of the account which Mahipati has given of Tukárāma.

The following narrative presents a remarkably vivid picture of the religious thought and life of the Maráthá people. The god Vitthal or Vithobá, whose worship prevails only in the Maráthí country and those districts adjoining to it in which the Maráthás have exercised a paramount influence, is here represented as all in all. The character of the deity, and the worship rendered to him, are deserving of very attentive consideration ; they will be found to supply an interesting chapter in the history of the religious developments of the Indian mind.

The paper by Dr. Stevenson on the Bauddho-Vaishnavas furnishes important information on this subject ; and the views of the learned writer will be found to be generally supported by the following documents. The subject, however, is still involved in much obscurity, and in seeking in any degree to throw light upon it, I have been greatly influenced by the remark of M. Burnouf : " Le seul moyen de resoudre ces questions avec certitude"—he is speaking of questions connected with Oriental mythology in general—"c' est de ne pas les traiter prematurement ; nous devons savoir qu' il faut auparavant demander aux textes mêmes les connoissances positives sans lesquelles la critique man- que à la fois de base et d' objet."*

At the same time a literal rendering of the entire voluminous account of Tukārāma would have been impossible. The style of Mahipati is intolerably verbose ; if the Marāthī people esteem it only "linked sweetness long drawn out," the fact only proves the sad corruption of their taste, while it forms a notable contrast with the compression of thought characteristic of many of the great Sanskrit works,—the Gītā, Raghuvans'a, &c.

A specimen may be here supplied of the style of the Bhakta Līlāmrita. The 25th chapter with which the account of Tukārāma commences, opens with nine *ovā* in praise of Vithobā. Then follow these words :

आता चित्त देवोनि श्रोतीं
सादर असिजे श्रवणार्थीं
तुकारामाची सप्रेम भक्ती
वैकुण्ठपती वश्य केला १०
व्याची आदि सविस्तर
सादर ऐका भक्त चतुर
जो जगद्गुरू वैष्णव वीर
अवतरे साचार भूमंडळी ११
शूद्र याती माजी निश्चीत
जन्मला तुकाराम वैष्णव भक्त
जो जगद्गुरू मूर्ति मंत
विश्वोक्धारार्थ अवतरला १२

* Bhāgavat Purāna ; Preface p. 2.

Now let the hearers pay good heed :
 Let them be attentive to listen
 How ardent the piety of *Tukárāma*,
 And *Vaikuntha's* lord [*Vishnu*] he propitious* made.

His beginning fully set forth,
 Attentively hear, O ye devotees wise,
 Who the world's *guru*, *Vaishnava* hero,
 Was incarnated truly in the world.

Amidst the *S'údra* race verily
 Was born *Tukárāma*, the *Vaishnava* devotee,
 Who, the world's *guru*, shape-endowed,
 For the salvation of the universe was incarnated.

Verses of this character are susceptible of great condensation ; and in general throughout the following paper, the narrative of *Mahipati* has been reduced to a fifth or a sixth of its original dimensions. In important passages, however, the translation has been more literal ; in a few (which shall be specified) almost entirely so.

A deeply interesting question connected with the legend of *Tukárāma* refers to the sources whence the sentiments have been drawn. While, as a general rule, great respect is professed in the following history for the *Vedas* and *Purānas*, there is frequently a deviation from the doctrines both of the former and the latter,—a deviation which is not the less decided, because it may often have occurred unconsciously.

It is highly probable that the *Vitthal*-worship with which the popular literature of *Mahārāshtra* is so closely interwoven, is a congeries of many diverse materials. The doctrines of the *Bhagavad-Gítá*, particularly as interpreted by their great *Dnyānóbá*, have had a powerful influence on the opinions of the school. The *Bhāgavata Purāna*, interpreted by *Ekānátha*, is also expressly specified in the following account, as forming part of the studies of *Tukárāma*. Similar reference is made to *Kabir*, “the illustrious *Yavana* devotee,” as *Mahipati* styles him ; so that we have a connexion of some sort established between the *Maráthí* system and that of those highly influential mystics, the *Kabir Panthis* ; and a considerable resemblance will be found actually

* Literally, *subjected*.

to exist between the two.* Again, the influence of Buddhism on the Maráthí system must have been very great, if, as Dr. Stevenson supposes, the god Vitthobá himself be nothing more than a Buddhist sage metamorphosed into a Hindu deity.

Lastly occurs the question : How far has Christianity affected these Maráthá legends ? That it has to a considerable extent, is highly probable.

A careful perusal of the following legend will reveal many *ideas* which are certainly not Bráhmanical. How far these may sometimes resemble Buddhistic notions I am scarcely prepared to say ; but it will not escape notice that when the moral tone differs from that of genuine Hinduism, it frequently approximates to that of the Christian system. Or, if the detection of Christian ideas thus leavening a Heathen system demands a test of so much delicacy that to many minds the experiment may carry little conviction, there remains an important class of *facts* possessing a more palpable character, which resemble occurrences recorded in the Jewish and Christian Scriptures. In reading the wonderful acts ascribed to Tukārāma, we are not unfrequently reminded of Scriptural miracles ; and the coincidences appear too numerous and too marked to be merely accidental. The most singular of these coincidences is the assertion that Tukārāma ascended to heaven without dying. It is remarkable that the assertion is not made regarding any other of the Maráthá saints, not even of the great Dnyānobá. Certainly one would not have expected such a statement in a Hindu system of faith ; more natural, had it been desired to exalt Tukārāma in consistency with Hindu ideas, would have been such a representation as is given regarding the departure of Kabir, मिले पवन सौ पवन, *air mixed with air.*† It is true that in the Mahábhārata, Yudhishtira is represented as journeying by the summits of the Hímalaya mountains into heaven, accompanied—

* Here our inquiry merges in a wider one, that of the origin of Kabir's system. The reform wrought by Kabir seems to have been immense. Mahipati calls him "a Yavana", that is, a Musulman. If Kabir was an actually existing individual, and not merely the personification of a system, he probably was a Hindu by decent. Muhammadism however seems to have greatly influenced his views.

† Prof. Wilson on Hindu Sects : Asiat. Res. Vol. XVI p. 55.

strange to say—by his dog;* but the coincidences between the circumstances of his ascent and that of Tukárâma are by no means so close as might be supposed. The complexion of the Maráthí legend reminds us much more of what is recorded in the Christian Scriptures: and again, of the two great events to which the ascent of Tukárâma bears a resemblance, it is important to note that in several points it approximates rather to the ascent of Elijah than that of Christ.

These resemblances are facts, and as such do not admit of question; but their explanation must be set about with exceeding caution. There has been, for a considerable time past, a very decided reluctance on the part of our greatest Orientalists to allow the existence of Christian elements in Hinduism; and when we remember the reckless haste with which the Maurices and Fabers of former days so often found or fancied coincidences which more thorough scholarship has set aside, we can scarcely be surprised at the reluctance in question. Still, Hinduism has unquestionably been for many generations an eclectic system, absorbing and assimilating much from the various forms of belief with which it has come in contact; to suppose otherwise is not only opposed to philosophy, but in the face of established facts. The caution and learning of Prof. H. H. Wilson give importance to his admission that “the loan” which the West received from the East “may not have been left unpaid”; and that “it is not impossible that the Hindu doctrines received fresh animation from their adoption by the successors of Ammonius†” in Alexandria. We need not now, however, refer to the communication of ideas from the West that may, or must, have taken place in the early days of Christianity, and particularly when the Syrian Christians planted churches in India.‡ Whatever influence the presence of Jews, Syrian Christians, and Musalmans may have had in diffusing over India ideas ultimately traceable to the Old and New Testaments, may all come into consideration as additional evidence corroborative of the point now contended for; but even were the whole of the support thus afforded, to be swept away, the intermixture of Christian ideas with the Maráthí legends would still be easily explained. The Portuguese arrived in India in 1498; and from an early date in the sixteenth century were indefatigably

* Mahábhárata, *Maháprasthânika Parva, Adhyâya 2*. Calc. Edit. Vol. iv. page 274.

† Vishnu Purana p. ix.

‡ Cosmas Indicopleustes tells us he found Christian churches in Calliana—apparently the one near Bombay.—Male (Malabar?), and Toprobane (Ceylon.) He wrote in A. D. 525.

active in endeavouring to extend their religion. Portuguese Missionaries were welcome guests at the courts of Akbar and Jehangir ; and the singularly eclectic system of religion devised by the former of these Emperors, together with the public religious discussions at court in which the Portuguese Missionaries took part, must have widely diffused an acquaintance with the leading ideas of Christianity.* Again, the important settlements formed by the Portuguese in the Maráthá country—Goa, Bassein, Revadanda, Bombay,—the numerous conversions which took place,—the very violence they employed in propagating their views,—must all have conspired to direct the attention of the Maráthás to the Christian religion. It is hardly conceivable that Tukárāma, who died exactly two hundred years ago, after having lived within eighty miles of Bombay and apparently visited it or some other important place near it (see *infra*), should not have heard of the religion of the warlike, energetic, and proselytizing foreigners, who had been in the neighbourhood for 150 years. The biographer of Tukárāma, who wrote 125 years later still, cannot surely with any shadow of reason be imagined ignorant of an event so vitally affecting the destinies of his own nation and religion, as the extension of the Portuguese dominion and the Christian faith. And if acquainted with the facts recorded of the great Founder of Christianity, the prophets and the apostles, what more likely than that he should appropriate, when it could safely be done, those boasted evidences of an actively hostile system, to the support of his own,—what more natural than for Mahipati to labour to glorify his “Vaishnava hero—the teacher of the world—incarnate for the salvation of the universe”, by investing him with attributes and honours rivalling in Hindu estimation those of Jesus Christ himself? The case of the once famous Apollonius of Tyana will at once occur to those familiar with the early history of Christianity, as strikingly parallel with what we suppose to have occurred in that of Tukárāma.

It is quite possible that the following facts of Tukárāma's life may not appear to some to possess all the resemblance now asserted, to facts recorded in the Christian Scriptures. But a moment's

* The learned Feizi was directed by Akbar to make a Persian translation of the Gospels. Two of Jehangir's nephews embraced Christianity with his full permission.

reflection will convince us that ideas appropriated by one system from another are not simply transplanted as they stood in their native soil, but are necessarily modified, in accordance with the genius of the system into which they are transferred. Every day's experience proves that when Christian ideas are inculcated on those who are familiar only with Hinduism, they are seldom at first rightly apprehended; the shape, the colour they assume are so far changed that a careful scrutiny is required before the parentage can be detected. What applies to the transference of words from one nation to another, holds good in respect to the transference of ideas. Comparative philology has demonstrated the close connexion that exists between vocables in innumerable instances in which it had entirely escaped the untutored eye and ear. Ideas are subject to a like modification of form, which conceals their original, although their essence may have remained unaltered. It would be wholly unreasonable to suppose that Christian ideas could be transferred into a system so alien in its spirit to that in which they arose, as Hinduism is, without being, as it were, *recast*,—without sustaining alterations sufficient to impose upon the casual observer. There may be near relationship, where there is little superficial resemblance. Yet, on the other hand, resemblance does not necessarily involve relationship. We are not at liberty to infer from the mere fact of the same ideas being found in two different systems of thought, that there has been a communication from the one system to the other, or that both systems have necessarily drawn from a common fountain, unless indeed that common fountain be the human mind, which, amid endless variety of outward circumstances, remains true to certain grand original laws impressed upon it by the Author of our being. The determination then of the extent to which one system of thought has been indebted to another, while it is one of the most interesting, is at the same time one of the most difficult tasks, with which criticism has to deal. A full and accurate acquaintance with historical facts is a primary requisite towards the solution of the problem; but in truth a *calculus* of a higher order than mere erudition is required, for the question touches some of the deepest points both in philosophy and religion.

It is with exceeding interest that I have perused, since the above remarks were written, the review of the *Prem Sāgar* in the recently published second volume of M. Garcin de Tassy's *Histoire de la Littérature*.

ture Hindoui et Hindoustani. The learned professor contends that there exists "a striking analogy between many points" in the life of Jesus Christ and that of Krishna as set forth in the Prem-Sâgar, and particularly between the doctrines of the Gospel and those expounded in the Hindu work; and he holds that the resemblance is owing to "ancient Oriental traditions regarding the Messiah, or future Christ, and to the history of Jesus Christ himself, brought into India from the earliest times of Christianity." The first idea suggested by the perusal of M. Garcin de Tassy's remarks, is the change that has taken place in the spirit animating Oriental studies, when a scholar of the name of M. Garcin de Tassy can venture to refer so important a part of Hindu mythology as the popular account of Krishna, to Christianity as its ultimate source. For the principle is one of very wide application, and will affect a large portion of the contents of the Purânas as well as the Prem-Sâgar. A profoundly interesting inquiry it would be—and no less intricate than interesting—to determine how far the communication of Christian ideas to India in the early days of Christianity, may have affected that great reconstruction of Hinduism, which took place after it had proved victorious in the war of extermination it waged with Buddhism,—a reconstruction which is exhibited to us in the Purânas. M. Garcin de Tassy will probably not have the general suffrages of Orientalists in his favour; but, although he cannot well be said to have proved his point, it is perfectly possible that fuller investigation may corroborate, instead of invalidating, the view he so ably and strenuously supports. In the meantime, whatever measure of probability may be conceived to belong to the opinion of the learned professor, becomes a powerful *a fortiori* argument in favour of the belief that Christian elements have been incorporated with the story of Tukárâma. If the early introduction of Christian ideas into Upper India be a matter of probability, the early introduction both of Christian ideas and Christian people into Western and Southern India, is a matter of certainty. Moreover, Christianity was early planted all along the great routes of commerce between India and the West; and even so late as the days of Marco Polo in the 13th century, the people of Socotra were "baptized Christians and had an Archbishop." It was however remarked above, that with all the evidence deducible from this early introduction of Christianity we can easily dispense, and rest the explanation of the approximation of the later Maráthi legends to

Christian facts and ideas, solely on the introduction of the religion of the Portuguese.

Before dismissing this subject, it may be observed that if the view now supported regarding the origin of the story of Tukáráma* be correct, one might expect that the influence of Romanism, in those particulars in which it diverges from Protestantism, might be pretty distinctly marked in the following narrative;—and such would seem in fact to be the case. The reader who is acquainted with the “Acta Sanctorum” or books of a similar character, will occasionally fancy he hears in the history of Tukáráma the echo of monkish legends and the achievements of “saints” of the middle ages.

Finally, whatever conclusion may be formed respecting the origin of these Maráthi legends, the legends themselves will retain their interest unimpaired. The character of the Vaishnava “hero-saint” as delineated by Mahipati, is intended to present the very *beau idéal* of a holy man and peculiar favourite of the Deity. Let the picture be examined in no spirit of mere dry antiquarianism, but with that hearty concern with which it behoves us to ponder the conceptions of millions of human beings on the highest of all subjects,—conceptions which to this day powerfully sway the minds of the mass of the Maráthi nation. It is true we shall be here engaged with what may be termed the “morbid anatomy” of the human mind; but that study is not less essential to the right investigation of man’s spiritual constitution, than the study of the morbid anatomy of the body is to the inquirer into his material nature.

A feeling of impatience may sometimes arise during the perusal of the following narrative, and the reader may be tempted to throw it away in disgust. For it must be admitted that Mahipati, in his anxiety to portray his hero’s innocence of mind, has overstepped the boundary between the childlike and the childish; willing to exalt his simplicity, he has degraded him into a downright simpleton. In this, Tukáráma has scarcely had justice done him; his writings leave a far more favourable im-

* I observe, since the greater part of the above was written, the following sentence in Dr. Stevenson’s account of the Bauddho-Vaishnavas. “How far a partial acquaintance with Christianity as introduced into India by the Portuguese and others, may or may not have tended to give a greater prominence to the last mentioned particular [viz. forgiving injuries and repaying evil with good] it would be interesting, although perhaps difficult, to ascertain.”

pression of his good sense than the delineation of his biographer; and in a word, we have here sometimes a caricature in place of a picture. Yet, with all its blemishes, the following narrative contains an element of common sense, and a comparatively correct estimate of moral relations, which are wanting in the histories of Brahmanical gods and demigods, and Buddhist and Jaina sages. In spite of all the vagaries of Tukārāma, we feel we can generally understand him,—we share some feelings in common with him; whereas even a Buddhist or a Jaina saint (such as Mahāvīra in the Kalpa Sūtra) seems as entirely severed from our acquaintance and sympathies, as if he belonged to another planet, or an entirely different system of worlds. The philosopher Hegel has affixed to the Hindu mind the distinctive epithet of *maasslos*, that is, *measureless, proportionless*. While possessed of much acuteness, it has evinced itself to be almost wholly devoid of that faculty with which the ancient Greek mind was so richly endowed,—a fine sense of fitness, proportion, harmony. Even so, doubtless, Mahipati very frequently offends against “the modesty of Nature;” but yet, his ideas will appear sober, rational and consistent, when placed side by side with the tremendous reveries of the earlier mythologists of India, whether of orthodox or heterodox schools. No argument was based in the above remarks on this pervading element of (comparative) good sense and correct moral perception; but it would seem to prove still more convincingly than any series of facts and ideas that might be separately specified, that these later Marāthī legends have been powerfully affected by an element entirely foreign to the proper Hindu system.

Bhakta Līlāmṛita : CHAPTER XXV. There was a man of the Sūdra caste, named Viśwambhar, by occupation a shopkeeper. The custom prevailed in his family of going regularly on pilgrimage to Pandhari [Pandharpūr]. When Viśwambhar was come of age, at his mother's request he began to visit that city every *ekādśī* [11th and 22nd of the month]. He continued to do so for eight months; in the ninth, he had a vision in which the god Vithobā thus addressed him: “O my worshipper, on thy account I have come to Dehu.”* Having thus spoken, the god appeared to withdraw into a clump of mango trees. Viśwambhar, when he awoke after seeing this vision, told the matter to his neighbours and friends, who then accompanied him to the clump of mango trees. They perceived a delightful odour as they approached it; sweet-smelling flowers, *tulasīs*, and fragrant powder surrounded them. Still they saw no trace of Vithobā. On this it occurred to Viśwambhar to dig up the ground, whereupon a voice from heaven was

* A village about 12 miles from Puna.

heard saying that Vishnu had come to Dehu on account of Vis'wambhar ; and that they must dig up the ground with their hands only, and without any tools. They obeyed, and found in the ground fragrant powders and *tulas* in abundance ; and last of all the image of Vithobā was found. They carried the image to Dehu, and set it up by the bank of the river Indrayani.

Vis'wambhar had two sons, the elder named Hari, the younger Mukund. Both of them found employment in the service of the king. Then they sent to Dehu for their wives and their mother. Their mother (whose name was Amāi) had thrice a vision, in which she was commanded to return to Dehu. Accordingly she wished to return, but her sons would not consent. She had then a fourth vision, in which she was told that a sudden calamity would cut off both her sons, at a particular hour that very day. She told them the vision, and began to weep bitterly ; but the sons laughed at her fears. That day, while they were sitting engaged in conversation after their morning meal, an order arrived from the king that they should instantly proceed to the field. The sons did so, and both fell.

On this, the wife of the younger son Mukund died, a Sati ; which the wife of the elder did not do, as she was pregnant at the time. Amāi then took the latter and removed to Dehu, from which, after some time, when she found it difficult for both to find support, she sent her daughter-in-law to Maher. Amāi was thus left alone, in extreme old age, and blind ; and then Vithobā in the form of her son, and Rakhumāi [his wife] in the form of her daughter-in-law, waited on her for some years, and when she died, performed the funeral ceremonies. Her daughter-in-law who lived in a neighbouring village, on hearing of Amāi's death, came with her son to perform the necessary ceremonies, and was greatly astonished to learn that all had already been duly performed by the son of the deceased.

CHAPTER XXVI. The grandson of Amāi was named Vithobā. The blessing of the god rested on him and his mother. His son was called Padāji, whose son was Sankar, whose son was Kānhya, whose son was Bolhobā. Bolhobā spent 24 years in pilgrimages and other religious services, at the end of which period the god Vithobā extended his special favour to him. The three gods came to him in a dream and promised him three sons. His wife Kankāi first bore a son by the grace of Siva who was named Sāvaji ; then a second by the grace of Vishnu, named Tukārāma ; then a third by the grace of Brahmadeva, named Kānhā. At the giving of a name to Tukārāma, and all the doings therewith connected, Rukmini [Rakhumai] came and brought plenty of money with her. The marriages of these three sons were celebrated with great splendour. When Bolhobā found himself getting old, he wished to resign all his worldly business into the hands of Sāvaji ; but Sāvaji refused to accept it, and it was then entrusted to Tukārāma.

Tukārām's wife was afflicted with asthma, on which account his parents procured for him the daughter of Apāji Gulbā, of Punā, as a second wife. Some time after, his parents died, as also the wife of Sāvaji his brother, who thereupon became an ascetic, and spent his time in travelling as a pilgrim to holy places, such as the seven* holy cities, the twelve Jyoti lingas†, Pushkar and others.

* These are Ayodhyā, Mathurā, Mayā, Kāsi, Kānchi, Ujjayani, Dwārakā.

† These are Sonanāth, Mallikārjuna, Mahankāl, Onkar Māndhātā, Parli Wajjanāth, Nāgesvar, Rāmesvar, Tryambakesvar, Kāsi Visvesvar, Bhimā Sankar. Badrikedār, Ghrishanesvar. These twelve are dedicated to Siva.

CHAPTER XXVII. After this, Tukárâma's affairs got into disorder. He had a shop, but was unsuccessful in business. He then began to carry loads on bullocks and laboured night and day; after which, he twice borrowed money and carried on business, but with no better issue than before. He borrowed money a third time, but was at last driven to sell his trinkets. His friends however exerted themselves; they obtained some commissions for him, and borrowed money on his behalf, earnestly exhorting him to have nothing to do with the worship of Vithobâ. His wives now became violent against him; and so, loading some bullocks, he set out on a journey. His bullocks were four in number. Of these, three fell sick on the way and died,—one only remaining. His fellow-travellers became quite tired of his continued religious exercises, and gave him the slip. Tukárâma was thus left alone; night came on, and wind and rain accompanied the darkness. Tukárâma knew nothing of the road. On this Vithobâ, in the guise of a traveller, came up to him and shewed him the way. They arrived at the river Indráyani while it was greatly swollen. The god, however, placed his *sudarshan** on the water, and safely conveyed Tukárâma and the bullock across the torrent.

When the people of Dehu heard that Tukâ had arrived, they came about him and pressed him to abandon the worship of Vithobâ, saying that all who were his votaries were reduced to poverty.† They bitterly reproached Tukárâma for his adherence to the god.

After this Tukárâma filled three sacks with pepper and proceeded to the Konkan. When he sat by the *bandar* for the purpose of selling, some people came and stole it. On this, Vithobâ, assuming the appearance of a *sipahi* of Tukárâma's, paraded through the town scolding the people. Then taking the taxes due to Government, in the form of a public officer, he brought the money to Tukárâma. The two afterwards dined together.

CHAPTER XXVIII. Tukárâma was proceeding on his journey home with the money thus obtained, when a sharper met him, and cheated him into parting with it for some brass rings, which, being gilt, were taken by Tukárâma for gold. He presented these as payment of his debts; but his creditors soon discovered the quality of the rings and were mightily incensed against him.

The name of Tukárâma's first wife was Rukmâi, and that of the second Avali, otherwise Jijâi. The latter raised the sum of two hundred rupees on her own credit. With this sum Tukárâma purchased a quantity of salt, and proceeded towards the Bâleghât. He there sold the salt, and purchased *gûl* [molasses], which again he sold in a city. As he was returning home with his money, a Brahman who had to pay a fine of two hundred and fifty rupees, came to the village in which he had put up, and begged Tukárâma to help him. Tukárâma at once gave him the two hundred and fifty rupees.

For this, Tukárâma would certainly have been beaten by his wife Avali. To prevent this, Vithobâ assumed the form of Tukárâma, and going to the *savakâr* got a settlement of the whole account, and an acknowledgement of its payment, and moreover gave him five pagodas as a present for Avali. In the meantime, the other *wânîs* arrived, and the circumstance of Tukárâma's having given 250 Rupees in charity was everywhere talked of, and his character was thought to be ruined.

* Or, *chakra*.—The discus of Vishnu.

† The worship of Vishnu is conceived especially to lead to poverty.

After this, things became very dear,—two *páyals* of grain were sold for a rupee; people began to die of hunger, and cattle died. Tukárāma sold his sacks and the accoutrements of his bullocks and bought 2 *páyals* of grain. When that was done, his elder wife died of hunger. The rate then was one *ser** for a rupee.

When Tukárāma was 13 years old, he had to engage in worldly affairs; when he was 17, his parents died; when he was 18, his sister-in-law died; when 20, his elder wife and his son died; when 23, he became bankrupt. Thereafter, he renounced all worldly employments, and proceeding to Bhámbanāth, a mountain to the west of Dehu, sat down in religious contemplation, fasting at the same time for 7 days. On the seventh day, the god appeared to him. Kánhobā his brother at the same time was fasting and going about in search of Tukárāma, whom he found on the seventh day.

After Tukárāma had fasted 7 days, the god assumed the form of a terrible, huge, black, serpent; and approaching Tukárāma, moved round about him, loud-hissing, and with hood displayed. Tukárāma shut his eyes and sat calm. Thereupon a voice from heaven was heard, saying: "It is the god in serpent's form; fear not; look at him." Tukárāma said in his own mind: "No, I am Vithoba's worshipper; I look only at him." Then the serpent vanished, and Vithoba, in four-armed form, appeared.

CHAPTER XXIX. The two brothers now proceeded to Dehu, and refreshed themselves with food. Tukárāma then renounced all worldly affairs, and taking all the bonds and papers regarding money due to his father, he threw half of them into the Indrayani, and gave the rest to his brother, whose affairs he separated from his own. From that day he used to sit on the mountain Bhámbanāth, in religious meditation, during the day, or occasionally he sat among the *karanza* bushes by the side of the river Indrayani; and after sunset he used to go to the temple in the village, and make recitations (*kathā*).

A certain cultivator employed Tukárāma to watch his field, promising to pay him six *páyals* of grain (*zondhalā*) when the harvest was over. He then went himself to purchase some grain at a distance. Tukárāma sat down on the wooden erection in the midst of the field, but did not drive away the birds, saying: "These are God's creatures like myself; if I, a worshipper of Vishnu, frighten them away, it will be grievous wrong." Accordingly the birds came, and ate the grain, while Tukárāmasat wrapped in religious meditation. At noon he said to the birds: "Now you must be thirsty; go and drink." In the evening he said: "It will get dark upon you, quickly now go home, and come back tomorrow." This happened day after day for a month. Then the cultivator came back and on seeing his field, fell into a rage. The villagers became mediators between him and Tukárāma. Tukárāma said; "he told me to sit and watch the birds;† which I did." The villagers however decided that Tukárāma should pay two *khandis* of grain to the cultivator, and keep the rest for himself. The cultivator agreed. They went to the field, and lo! the grain was now quite thick. The cultivator now demanded to have his written agreement back, but they would not give it, and he received his two *khandis* of grain.

* Equivalent to 2 Bombay *ser*s. At present (Feb. 1848) good rice is selling in Bombay at the rate of 30 *ser*s the rupee. Tukárāma however ate *zondhalā*, which is selling at Puna at the rate of 100 Bombay *ser*s the rupee.

† A play on the phrase.

When the whole was threshed, Tukārāma had 15 *khandis* ; but he would not accept of it, and the people stored it up in the house of Mahādēji Pant.

CHAPTER XXX. The price of this grain went to repair the temple of Vithobā.

Tukārāma at first possessed no lore : wherefore he now committed to memory the sayings of ancient sages, such as the *abhangas* of Nāmadēva, and the sayings of Kabir the Yavana devotee. He collected a correct copy of the works of Dnyāneśwar, and the *tikā* on the Bhāgavat, composed by an avatār of Vishnu, Ēkanāth. These books he easily mastered. He also diligently noted the narrations* of the Bhāgavat regarding Śrī Hari [Krishna] ; also the Yoga Vāsishtha, and the Amritānubhava.†

Avali, the wife of Tukārāma, was an ill-tempered woman, and was bitterly opposed to the god Vithobā. She was a faithful wife, however, and used to travel daily the distance of 3 kos [6 miles] to the mountain where her husband was, carrying his food ; and she would not touch any thing till he had eaten. One day she was going to him with some water and a piece of bread, when a large thorn stuck in her foot, on which she fell and fainted away. Vithoba came to her and restored her, whereupon the two proceeded to the mountain. They all sat down to dinner ; Vithoba was first served, and received all the bread. Then said the god, "Now serve Tukārāma." The basket was then again uncovered, and found to contain abundant provisions of various kinds. They all dined ; and as there was no water (it having been spilt when Avali fell), Vithobā told Avali that she would find water in a particular spot. She went and found a spring there, when she lifted up a stone. Said Avali, "The producing of water here is marvellous indeed." Vithoba then told Tukārāma not to go so far from home, as his wife had so much trouble in reaching him.

CHAPTER XXXI. One day Avali went behind the house to bathe, and laid her garment on the wall—a petticoat given her by her father, and her only one.† Meantime a poor Brahman's wife came and begged the garment for herself. Tukārāma told her to take it and go away quickly. Avali then seeing her petticoat was gone, remained fretting behind the house, unable to enter it. At this time a large number of her relatives had arrived with an invitation to a marriage, and were searching for her. The god, seeing the distress of his votary's wife, threw a garment of yellow silk upon her, in which she entered the house and dazzled them all with the splendour of her dress.

After this Tukārāma did many other acts of kindness. When he saw any one oppressed with a burden, he would carry it himself. He would shew travellers the *tsāvadi*, or the temple, to rest in. When a traveller's feet were swollen, he would pour warm water on them, and rub them with his hands. To old cast-off cows and bullocks he would give grass and water, and stroke them kindly. He would put down sugar, ghee, and flour, for the ants to eat. He greatly lamented if his foot trampled any insect to death. When a crowd were listening to religious recitations, he would fan them. He would feed the hungry. When no water was found on the road, he would put a vessel of water for weary wayfarers. He always told the truth. He gave medicine to sick, solitary, travellers.

* The two last mentioned works were written, says our author, by Dnyāneśvar. Possibly, however, Dnyāneśvar is but a mythical personage. His name resembles the term *Dnyāni* (or wise) applied to Kabir.

† These things are specified on purpose to shew the poverty of Tukārāma.

The people of Dehu used to go to market at the village of Nanalākhyā Umbarā. There was a poor old woman among them, on whom Tukārāma had compassion. He asked her what she went to do. She said: "I go to bring oil." He offered to carry her there on his back; but at her request he let her stay behind, and brought her oil. What he brought would have sufficed only a week, but it lasted a very long period. When this circumstance became generally known, many people brought money to Tukārāma and bamboo vessels in immense numbers to hold oil. He took the money and vessels to the oilman, who asked: "How much shall I put in?" "I know not," said Tukārāma, "do as you think best." The oilman poured oil into the vessels, which Tukārāma carried back to Dehu, and the people recognizing their property, took them away. But the quantity in each corresponded with the sum paid. Avali complained that her husband was made to carry loads like a bullock. The people said they applied to Tukārāma, because the oil brought by him lasted a very long time.

One day his wife said: "To day is the śrāddha [festival for the *Manes*] of your ancestors, but there is nothing in the house." Tukārāma said: "I shall go and procure some vegetables; we shall cook them." He went and laboured all day in reaping wheat. In the meantime his wife awaited his return. Vithoba knowing what Tukārāma was about, assumed his form and came into the house carrying a bundle of things for cooking; then, inviting the people of the village, he made ready the śrāddha and the dinner. He then said, "I must now return the cooking-vessels to their owners," and disappeared with them. Tukārāma by this time was returning home with 4 sheaves (the pay of his day's work) on his head. These came in contact with a bees' hive, and the bees, irritated, settled on Tukārāma and stung him. He would not drive them away, saying, "This is my ancestors' feast-day; they are come and feeding in the shape of bees." He went on with the rite, sprinkling water here and there. Vithobā now appeared, and drove away the bees. When Tukārāma arrived at his house, his wife told him all that had happened, at which he was much surprised. Then Vithobā and Tukārāma dined together.

CHAPTER XXXII. Tukārāma had a vision both of Vithobā and Nāmadeva, and was requested to compose the number of *abhangas* still wanting to complete the intention of Nāmadeva, viz. 5 krores and 51 lakhs*. He commenced and composed 900 *oryā* on the 10th *skandha* [of the Bhāgavat] and much poetry besides.

In Dehu there was a Brahman, Mambaji, a pretended Sādhu, [holy man] whose fame was obscured by that of Tukārāma. Mambaji highly resented this and waited for an opportunity to disgrace Tukārāma. Tukārāma had a buffalo (a present from his father-in-law) which one day broke down the fence of Mambaji's garden and did some mischief, which still farther provoked Mambaji. A large number of people came to the village, and Tukārāma removed the thorns of the fence out of their way. On this, Mambaji rushed on Tukārāma and beat him with a thorn-branch till it broke in pieces, when he seized another and another, till he could no longer lift his arm. Tukaram quietly went home; Avali extracted the thorns, and Vithoba relieved him of the pain. That day Mambaji did not come to the *kathā*; whereupon Tukārāma went to his house, and, pacifying him, brought him to the meeting.

The said buffalo was once carried off by two thieves. They had got on

* Nāmadeva had intended to make 100 krores, that is,—1,000,000,000.

a considerable way, when Vithoba appeared in the shape of a tall black figure, with a huge cudgel over his shoulder, right in front of them. The thieves turned to one side, but so did it. Whenever they tried to turn off, the terrible *bhūta*-looking shape posted itself in the way. The thieves became terrified, and taking back the buffalo, bound it in the place whence they had carried it off. "Now" thought they, "we shall get off"; but no! for there stood the ghost, as frightful as ever. So they went to Tukārāma, and confessed all they had done. "If you want the bullock, take it," said Tukārāma. "No," said they, "we only want to be delivered from that frightful ghost". On this Tukārāma, by mental vision, perceived that the god was not there, and he began to invoke his presence. Whereupon, in the sight of all, Vithoba entered the temple, with a huge cudgel over his shoulder.

CHAPTER XXXIII. Avali was wonderfully delighted with the above mentioned circumstance, and she gave Tukārāma milk at dinner-time. Tukārāma said it would be much better to offer it to the god. She then filled a brass vessel, which Tukārāma carried into the temple, and the god drank it. This took place many successive days, and Avali began to marvel what it could mean. "How can the image drink?" said she to herself. She asked her daughter, whom Tukārāma used to take with him to the temple, about it, and the child said, "Yes, the god really drinks." Still Avali would not believe it, and determined to examine the matter herself. So she took a brass-vessel full of milk hissing-hot, and applied it to the god's mouth, saying to herself, "This is my foe!" The god instantly turned away his head, and a blister appeared on his lip. Whereupon Avali cried: "So then, there is life in the black stone." The god told Tukārāma what had occurred. In great sorrow, Tukārāma went into the temple, and sang the praises of Vithoba. The blister then went down; but the wry neck remained, and still remains.*

When Tukārāma was one day going to Chākan, a swarm of bees settled on his body; but he would not drive them away, saying; "One should not spare his own body, when he can do others good." He met many travellers, but they would not come near the bees. At last Vithoba, in the guise of a traveller, came and drove them away.

The elder son of Tukārāma, Mahādeva, suffered much from a retention of urine, and was on the point of death. Avali, who had anxiously tried every kind of medicine, said: "I will go and cast the child on that black† [scoundrel], who has ruined all our worldly prospects." So saying, she took the child to the temple and was going to cast him on the image, when Rukmini cried out: "Go, the child is well." Avali looked at her son, and saw that in truth she must forthwith quit the temple, for the boy had obtained complete relief from the malady.

A Brahman of the name of Gangādhara Mavāl, belonging to the village Kadas, was Tukārāma's writer [amanuensis]. An oilman from Chākan, Santaji Jagnāde was his disciple. They both assisted him in singing. They abandoned the world and continued with him.

Vithoba himself appeared in a vision to Tukārāma on the 10th day of the clear moon of Māgha and imparted to him the *mantra* [mystic word] Rāma-Krishna-Hari.

* The people of Dehu shew to this day the image of Vithoba with the wry neck.

† Vithoba, is the same as Krishna, who is always represented as black.

CHAPTER XXXIV. Avali's temper was so bad that Tukārāma now quitted his house, and remained away for two months. However, Avali promised to reform, and Tukārāma returned home. He instructed her as to the duty of yielding all to God. Then, next day, he made her give away all their property. After this, when Avali had washed some clothes and put them out to dry, Rukmini, assuming the appearance of a Mhār woman came and begged a garment. Tukārāma was loth to refuse, and presented her with the clothes, which his wife had laid on the wall. When Avali found herself thus treated, she took up a stone and ran to the temple, intending to break the god's feet; but Rukmini appeared and put into her hand as much as she could hold of gold coins, and both a *sādi* and a *choli*.*

Tukārāma's fame was now spread abroad, and Chintāman Deva sent him an invitation to visit him. Tukārāma knowing this in his own mind, set out on the road to Chinchawad, and met half-way the bearers of the invitation. All then proceeded to Chintāman Deva, whom they found engaged in mental worship, so that Tukārāma, not to disturb him, sat down outside. Tukārāma perceived that Deva's mind had wandered from his worship to his garden, and was occupied with something he had to say to his gardeners. When the two met, Deva asked when he had arrived: "I arrived," said Tukārāma "at the time when your mind was in your flower-garden." When the time arrived of offering food to the god Ganpati, Deva began to present it, whereupon Tukārāma cried out: "The god is not here; Ganpati is gone to the sea, to rescue a worshipper from drowning". Deva then looked closely, and after some time he clearly saw the god come back, his silken garments dripping with salt water.

The dishes were now arranged for eating, and Tukārāma requested that two might be placed for Vithobā and Ganpati. When they were sitting down to dinner, Deva said: "Ganpati will not come for me; do you call him." On this Tukārāma sung two *abhāngs* in praise of Ganpati, who forthwith came, and took his seat beside them. Vithobā did the same, and Deva made offerings to them. He and Tukārāma then dined with the two deities, who however appeared to them alone. The other people only saw the dishes emptied.

Tukārāma had three daughters, Kāsibāī, Bhāgirathī, and Gangabāī. When they were marriageable, Avali spoke to her husband on the subject. Next day Tukārāma went out, and seeing the boys playing in the street, he selected three of his own caste, and, calling a Brahman, had them forthwith married to his daughters.† When their fathers knew of it, they made a great feast, and the villages contributed, on the part of Tukārāma, what was required for the four days of the marriage rejoicings.

A Brahman, the Deshpāndya of the Bid *parganā*, anxious to obtain religious knowledge, sat before Vithobā's temple at Pandharpūr, fasting for ten days. Vithobā appeared to him in a dream, and bade him go to Alandi, to Dnyānoba.‡ He fasted in like manner 10 days there, when Dnyānoba appeared and sent him to Tukārāma; whereupon he came to Dehu. Tukārāma filled a cocoa-nut with jewels of immense value, and gave it to him along with 11 *abhāngas* with this title, *The best knowledge*. The Brahman,

* Parts of female dress.

† Such things are intended to denote the *unworldly* character of Tukārāma. He was indifferent about high or rich connexions.

‡ Dnyānoba was worshipped at Alandi as a god.

as soon as he saw the verses were only in Prākṛit, flung them away along with the cocoa-nut, and returned to Alandi. Tukārāma sent a letter to Alandi of 13 *abhangas*, whereupon Dnyānóbā drove the man away. Now, this cocoa-nut had come from a merchant of Ahmedabad, who had filled it with jewels to the value of a lakh of Rupees; he first offered it to Dnyānóbā, but afterwards at his request sent Tukārāma the gift.

The Purānika of the Rājā Sivaji had among his people a silly Brahman called Kandobā. He came to Tukārāma and received from him the cocoa-nut and the eleven *abhangas*. From the study of the latter he acquired such a wonderful acquaintance with the Bhāgavat, that Sivaji heard of it, and made presents to Konda Shāstri (as he was now called), and expressed a strong desire to see Tukārāma.

CHAPTER XXXV. Tukārāma visited the village of Lohu, where he was most hospitably entertained. Among the rest a poor old woman, who gained her livelihood by bodily labour, prepared a feast. Her dwelling rested on the wall of a large house close by it, the wall of which had bent to one side after heavy rains, and was about to fall. Tukārāma, seeing the poor woman in distress lest all her preparations should go for nothing, said to her: "Don't be afraid; the wall shall stand till your feast is over." Four days after, the feast took place. Afterwards, they removed every thing from the house, and forthwith it fell. The religious recitation connected with the feast had to be held elsewhere.

There was a learned man in Wāgholi, called Ramesvar Bhat, who seeing the renown Tukārāma was gaining, was greatly displeased. He went to the Diwān and said: "This fellow explains the Vedas, and celebrates the importance of the name solely; and for these reasons, he ought to be expelled the village." The Diwān wrote to that effect to the Pātil and other officers in Dehu, who were sorely distressed at the order. Tukārāma when he saw the letter, proceeded to the house of Ramesvar, who told him to desist from making any new verses, and to bring all the old ones, and throw them into the river. The verses were brought, sewn in the form of volumes, and were cast in a bundle into the Indráyani. Whereupon, Tukārāma composed 19 *abhangas*, in lamentation over the sad event.—This Ramesvar used to proceed from time to time to Puna to worship Nāgesvar. Once he was on his way thither, when he bathed in a well belonging to a *fakir*. The *fakir* in anger cursed him, wishing that he might feel his whole body burning. This took place. Two disciples who accompanied him said, "confess your fault, and ask the *fakir's* forgiveness." "How can I, a Brahman, fall at a Mu-almán's feet?" said he. He put on wet clothes, and proceeded to Alandi, where he sat in supplication before Dnyānóbā, with a pitcher of water dripping on him from a tree over his head. There also lay Tukārāma, mourning the loss of his poems, upon a stone before Dnyānóbā's temple. The god vouchsafed a vision regarding the poems on the 12th day at night. He told the people that the books were dry and unburned in the river, and that they would yet float, like so many pumpkins. They did so, next morning. There were some swimmers among the people who straightway jumped into the water and laid hold of them. Tukārāma wrote 7 *abhangas* on this joyful occasion.

Dnyānóbā, in a vision, told Ramesvar to go to Tukārāma to be cured; who accordingly sent one of his disciples with a letter of confession and supplication, being afraid of going himself. Tukārāma, in return, sent him

an *ahbang*, and when he had perused it, straightway the burning left him. From that time Rameswar became Tukārāma's disciple.

CHAPTER XXXVI. The *fakir* on hearing this was amazed, and set out to visit Tukārāma. On the way he asked alms at the house of Chintāman Deva. The servants supplied him abundantly; but his pumpkin could not be filled. Then Deva came himself and calling for *viddhi* and *siddhi*, filled the vessel, and gave it to him. The *fakir* then proceeded to Dehu, and asked alms at the house of Tukārāma. Avali angrily repulsed him, but the child Gangābāi filled her little hand with flour and was going to give it. Avali caught her hand, and took out some of the flour; the rest the child threw into the mendicant's vessel, which it immediately filled. The *fakir* in astonishment cried: "What? are you Tukārāma?" "Are you a fool?" said the girl: "Tukārāma is in the temple." The *fakir* went and found Tukārāma, and remained with him two days.

One night, a woman met Tukārāma alone and tempted her to the commission of sin with her. Tukārāma rebuked her, and sent her away.

A Brahman, having to pay a debt of ten thousand Rupees, was sitting in supplication before Dnyānobā's temple. In a vision he was instructed to go to Tukārāma. He did so and was again sent to a *kāsār* [coppersmith,] who gave him two small copper coins in charity. Tukārāma took them, and touching them with a stone, turned them into gold; but as this was not sufficient, he turned his copper sacrificial vessels also into gold.

The *kāsār*, seeing this, thought Tukārāma must be possessed of the *paris*,* and began to pay him court in every possible way. After a year, a wonderful event occurred. The *kāsār* had procured 36 bullock loads of tin from Bombay, all of which was turned into silver. On this the *kāsār* gave up the world, became Tukārāma's disciple, and, with his money, built a well, still called the *kāsār's* well.

The wife of the *kāsār* was exceedingly angry with Tukārāma on account of the change that had taken place in her husband. She one day pretended to make a feast on his account, and when he went to bathe, she poured down upon him vessel after vessel of boiling water. The god however turned it into cold water. She then set food before him, with poison in it; but that too the god rendered harmless. Over the body of this woman there immediately appeared leprosy, and she was exceedingly distressed. She then obtained relief from taking (at the suggestion of Rameshwar Bhat) some of the clay from the place when Tukārāma had bathed, and anointing her body with it.

The Rājā Sivaji having heard how the poems of Tukārāma had reappeared, sent a *kārṅkūn* [writer] with a horse and umbrella to invite him to his court. Tukārāma wrote four *ahbangs* for the Rājā, and gave them to the *kārṅkūn*, saying, "Mount you the horse, and go back." "This is a very vicious animal," replied the *kārṅkūn*, "he allows no one to mount him." On this, Tukārāma stroked the horse on the back, and he became quite gentle, so that the *kārṅkūn* mounted without difficulty, and rode off.

Sivaji on this came to visit Tukārāma, and, having filled a plate with gold coins, presented it to him. Tukārāma would not accept it. "Say that you are the servant of Vithobā" said he; "and I wish nothing more." Sivaji divided the money among the Brahmans, and, on hearing Tukārāma's recitation, at night, abandoned all worldly employments, and throwing off his crown and regal garments, determined to become an ascetic. He would

* A stone, the touch of which turns metals into gold.

not for some days allow his ministers to approach him, until his mother, being informed of all this, came to Loho, and entreated Tukārāma to restore her son to his former mind and employments. Tukārāma then instructed him in the duties of the regal station, and he resumed his former condition. For four days more, he continued with Tukārāma.

There was a certain man called Nāvājī, one of Tukārāma's disciples, who, to give Tukārāma some rest, used to repeat the *kathā* for him. This man once said: "The deity of Dwārakā has taken up his abode at Pandharī."^{*} A Brahman who heard him one day repeating these words, said: "You will go to hell for saying that." Soon after this, this Brahman became dumb. Coming to Tukārāma, he wrote down the whole matter on a tablet.

A certain Kunbi was a very religious man. He brought a small cucumber to Tukārāma out of affection. Tukārāma divided it into 4 parts, and had eaten three of them when his disciples said: "Kindly give us part of the fruit." Tukārāma said: "This is not good to eat; but never mind; take this, and give the dumb Brahman half." As the Brahman ate, his speech returned. When the other disciples began to eat the other half, they all cried: "Oh how bitter"! and secretly spit it out.

When the Raja Sivājī was about to depart, he thought in himself: "If he give me a cocoa-nut, I shall take it as a sign that I shall have a son; if a piece of bread, that my kingdom shall be delivered." Tukārāma knew what was passing on the king's mind, and presented him with both the cocoa-nut and the bread.

There remained with Tukārāma, Kord Bhat the Puranik, Ramēsvar Bhat, and other 14 disciples.

CHAPTER XXXVII. Chintāman Deva was proceeding on pilgrimage to Bhimā S'ankar and arrived at Dehu (where Tukārāma had again gone to reside). He asked Tukārāma to grant him the blessing of some food from him; Tukārāma went into his house, and returned with some wheaten flour, rice, and ghee, as much as was sufficient for one man. On this, many other people came, and also asked for some of his food. Tukārāma prayed to Vithoba that what he had brought might suffice them all. Accordingly all received quite enough. Chintāman Deva was much surprised at this event.

A Brāhman who wished to pay off a debt, was sitting before Dnyānoba's temple, and by him was sent to Tukārāma, who again sent him to the *hāsar* mentioned above. The Kasar gave him four iron *pēs* (bars), a load which the Brahman could not carry, so that he hid three, and came with one to Dehu. Tukārāma turned it into gold; whereupon the Brahman went back, and searched for the three others, which however he could not find.

Tukārāma was going to the junction of two streams (Mulā and Bhima) to bathe; and passed on the way a flock of sheep, guarded by a very fierce dog, which, whenever any passenger approached, flew at his throat. This dog rushed on Tukārāma and all were terrified: but Tukārāma said to him: "What! I growl not; and you seize me?" Instantly the fury of the dog vanished, and all proceeded in peace to the bathing-place.

Tukārāma went to the village of Rājān to ask alms. A Brahman prepared an entertainment for him, whose son was about 8 years old, and had been dumb from his birth. The father entreated Tukārāma on behalf of

^{*} He intended to use the word *tsovarī*, but by mistake used the word *tsodavī*, a rather obscene term. Hence the threat of the Brahman.

the boy, and Tukárāma calling the child to him said: "Say Vitthal, Vitthal," and instantly the dumb spoke.

As Tukárāma and his people were returning home, the men who were keeping the flock, said: "This dog is now useless; you had better take him along with you." Tukárāma did so; and the creature became quite like a *Sādhū*,—on *ekadāśī* he would fast, and he would sit listening to all the sacred recitations.

Tukárāma's second son-in-law was very religious, and asked Tukárāma to give him instruction. Tukárāma gave him the *Gītā* to learn. As he was one day pronouncing it incorrectly, a *Jyoshi* rebuked him. He laid the *Gita* aside on this; but the *Jyoshi* was reproved by *Vithobā* in a vision and commanded to help the man in studying the book. This he did for four months.

Tukárāma was composing *abhangas*, and in celebrating the sports of *Krishna*, he said: "His face was dirty." *Rames'var Bhat* thought this would never answer, and he changed it to "His face was pale." Whereupon, the god appeared to him in a vision and reproved him. "Was I afraid?" said the god: "what could make me pale? My face was dirty; in my childhood I was eating dust; Tukárāma was quite right." So *Rames'var* repeated as Tukárāma had said.

Tukárāma was proceeding to *S'ambhus'ikhar* on pilgrimage, and was resting beside a tank, preparing dinner. The god *Sām̐ba* came as a *Gosāvi*, and asked food. They served him, and he ate every thing up. They procured a fresh supply, but on looking into their vessels, they found them still full. Whereupon, they understood that the stranger must have been the god whom they were going to visit.

Tukárāma was one day repeating the words: "If I walk repeating the name of God, each step is equivalent to a sacrifice.* An inhabitant of *Loho* heard this, and, taking a string, walked about, repeating the name of God, and tying a knot for every step. He did so for a year, and had a large bundle at the end. Meanwhile a devil was afflicting a man, who supplicated *Hari Haresh'var* † to deliver him. The devil coming into his body, said: "If the righteousness of one sacrifice be given me, I shall depart." The man came to *Loho*, and met the *Brahman* who had the string with the knots, and who, on hearing his case, cut off one knot, and washing it in water, made him drink the water. The devil forthwith departed, and all cried out: "How true was Tukárāma's assertion!"

Tukárāma went to *Pandhari* twice every year, in *ekadāśī* of *A'shād̐h* and *Kārtik*. Once, as he was going there, he was seized with fever. He then sent 14 *abhangas* as a letter to the god *Vithobā*, who, seeing the letter, said to *Rukmini* "Come, let us go to him." "Rather," said she, "send him *Garuda*." *Vithoba* wrote a letter, asking him to mount on *Garuda* and come to them; but Tukárāma, out of respect to *Vithoba*, refused to mount on *Garuda*, and sent him back with the request that the god might visit him. *Vithobā* did so.

CHAPTER XXXVIII. Thereupon, hand in hand, the two went to Tukárāma's house, and dined on boiled *zondhalā*, vegetables, and bread.

A *Brahman*, of the *Vedānta* school, came to Tukárāma to read the *Vī-*

* A remarkable saying, but how wretchedly misunderstood! This passage shews how much Tukárāma was superior to his followers and biographer. Yet doubtless even he would have used the name of God (or rather, of his god) as a *mantra*, or mystic word.

† A rather celebrated place of pilgrimage in the *S. Konkan*. This god is especially famous for casting out devils.

veka Sīndhu of *Mukund rāja*. Tukārāma, covering his head with his patched cloak, sat down to listen, while the Brahman continued to read and explain for the space of three hours. Seeing that Tukārāma neither moved nor spoke, the Brahman removed the covering from his head, and saw him sitting with his fingers thrust tightly into his ears. The Brahman was much grieved at this, but Tukārāma said: "If you pervert the mind of a worshipper of God, you will go to hell." This Brahman then embraced the views of Tukārāma.

One day Tukārāma went to Loho and bathed in a well, the water of which was salt. The well became sweet. It is still well known.

In this village a woman being displeased that her husband had renounced the world to follow Tukārāma, put bitter pumpkin among his food. For this, boils of the size of an *avalā* broke out on her body.

A Brahman made a feast for Tukārāma on a Monday. At the proper time of dining, the oil was deficient, and the lamp was going out. The Brahman was distressed, but Tukārāma said: "Look into the skin-bottle and see." His wife went to look, and saw a large quantity of oil. This oil lasted afterwards as long as the Brahman and his wife lived.

There was a stone before the door of the Patil's house in that village, on which Tukārāma used to sit. He was sitting there one day when a very poor man came, and asked alms. At Tukārāma's command he went and begged in the village, and some pieces of iron were given him. Coming back, he said "I have got this iron," and laid a piece down before Tukārāma on the stone. It was immediately changed to gold. He put down another, and another, which were changed in like manner.

The people of the village seeing this wonder, brought pieces of iron and laid them on the stone, but no change took place in these.

In the same place there was a Jyoshi, a very religious man, who became Tukārāma's disciple. One day he was sitting listening to Tukārāma's recitation, when his child died at home. His wife brought the dead body into the midst of the assembly, and said: "Restore my child to life, and shew yourself a true worshipper of Vishnu." Whereupon Tukārāma prayed to Vithobā, and the child rose up alive.

Two *Sanyāsīs* heard the recitation of Tukārāma, and going to Dadu Kond Deva, a high authority in Punā, complained that Tukārāma was destroying the *Karma mārga*,* and that Brahmins were falling down at his feet. Dadu Kond Deva, on this, fined the Brahmins of Loho 50 rupees and summoned Tukārāma. The Brahmins said: "How can we pay 50 rupees?" and accompanied Tukārāma. At the Sangam where they rested, people came to see Tukārāma in numbers like an army; and Dadu Konda Deva himself proceeded to pay reverence to him. In the first recitation a great *avadhūt*† appeared, naked, with his body shining with dazzling brightness and with the ensigns of a Gosāvi. He embraced Tukārāma, and made obeisance to him. "I longed to see you" said the wonderful visitant; "now I have done so." So saying he went up into heaven. Thereupon the people said: "Sure that was Mahadeva, or Dattātre."

Next night, in Puna during the recitation (the *Sanyasis* that complain-

* There are supposed to be three ways to salvation, the *karma mārga* or way of ritual observances, the *dayāna mārga* or way of knowledge, and the *bhakti mārga* or way of devotion. Tukārāma, like the Pandharpur school generally, advocated the last of these ways. Hence the accusation on the part of the *Sanyāsīs*. Hence too Tukārāma's opposition to the *Viveka Sīndhu* (as mentioned above) which advocates the *dayāna mārga*.

† A manifestation of the god Siva.

ed, and a great number of people being present) the Sanyasis were seen to rise up and prostrate themselves before Tukārāma. Dādu Kond Deva was exceedingly angry that the men who complained so bitterly of Tukārāma, should do this. But said they : "He now appeared to us in the form of Nārāyan [Vishnu] four-armed, and resplendent." On this Dādu Kond Deva ordered them to have their hair shaved off in five lines, to be mounted on the back of an ass and led round the city. All was ready for this, but Tukārāma interceded on their behalf, and the punishment was not inflicted.

(This Dadu Kond Deva was a man of strict and stern impartiality. Two instances of this shall be now given. One day when his wife had gone out, after giving him something to eat, he took some pickles. When his wife returned she rebuked him for taking her pickles. So, calling an attendant, he was going to cut off the hand that had committed the theft. The people about him begged him to desist ; and, at their suggestion, he cut off his sleeve. On another occasion he had given some grain to a woman to grind. When it came back, the meal was found deficient. The woman declared that she had committed no theft ; whereupon they searched, and found that the turning stick of the mill was small, and that some grains had fallen down below the stone. On this he impaled the mill.)

CHAPTER XXXIX. When the Rājā Sivajī heard of the appearance of the *avadhuta* and Tukārāma's assuming the form of Vishnu, he came to Puna to visit him. While he was sitting listening to his recitation, a body of Musalman horsemen to the number of 2000 came from Chākān to seize Sivajī, and surrounded the house.* Tukārāma in four *abhangas* prayed to Vithobā, who appeared and said to him : "Fear not ; let the recitation proceed ; I shall save him. The god then went forth and fled in the form of Sivajī, and the whole the body of horsemen galloped after him for 40 miles, which they did in 3 hours. Vithobā then entered a thick thorny wood, and disappeared. Tukārāma in the meantime peaceably ended his recitation. He presented in the morning a piece of horse's dung to Sivajī, who then went to Singad.

Kondoba of Loho was a disciple of his, who wishing to visit Kāśī [Benares] on pilgrimage asked Tukārāma for some contribution to aid him. Tukārāma on this drew a gold coin from under his seat and gave it to him, saying : "When you change this, always set aside for next time one pice, binding it carefully up ; it will become a gold coin too." He moreover presented him with three *abhangas*, to give one as a letter to the river Ganges, another to Viśveśwar, and the third to Vishnupad at Gayā.

When Kondobā arrived at Kāśī, the Ganges held out a hand covered with jewels and shining like the sun, to receive the letter. The people, not understanding this, offered the river many different things, but they were not accepted. Tukārāma's paper was then given, on which the hand instantly closed and disappeared in the water. When the *abhang* addressed to Viśveśwar was recited before him, he moved from side to side with pleasure, and a shower of *bel* leaves and flowers fell around.—When Kondobā returned home, Tukārāma asked him for the gold coin. Kondobā falsely told him it was lost. When he went home and looked for it, the coin had really disappeared ; but the knot in which he had tied it, was still there.

* It is an historical fact that Sivajī was nearly taken prisoner by the Musalmans, when listening to a religious recitation. It is interesting to note here the fact *in transitu* as it is changed into a myth, in Mahipati's hands.

On one occasion when the recitation was going on, the lamp went out; but light issued from the body of Tukārāma and the recitation went on. When it was ended, the light ceased, and the people perceived they were in darkness.

Tukārāma now came to Dehu, and there Vithobā gave him the promise that he would not let the eye of Death (Kāla) fall upon him.

Tukārāma came to Alandi one day, and as he approached, the birds were scared away from under a tree. On this he said: "There must be *bhed* [literally *doubleness* = *deceitfulness*] in my body," and so remained perfectly still, scarcely breathing, and not moving his eyelids: whereupon, after nearly two hours, the birds came and perched on his body. Though he now moved, they were no longer scared away,—but they flew off when any other person came near. This happened many times.

Hearing of this, Chintāman Deva sent him an invitation to visit him, but the messenger remained with Tukārāma, listening in fascination to his recitations. On this Deva himself set out to visit him; but Tukārāma being aware of it in his own mind, went to meet him. Deva said: "What are you?" Then Tukārāma cut open his leg, and shewed that there was nothing there but white cotton,—no bones, flesh, or blood. Then said Deva: "This is no human being, but an incarnation of a divinity."

CHAPTER XL. Tukārāma returned to Loho and had lived there a month, when the village was robbed, and all the inhabitants filled with lamentation. Seeing this, Tukārāma said to Vithobā; "Now take me to Vaikuntha." The god came and remained five days with Tukārāma, invisible. There had assembled an immense company to see what was to happen to Tukārāma. On the 1st day of the clear moon of Phalgun, the god said to him: "Tomorrow I take you away." Tukārāma in those days employed himself in recitations and composing *abhangas*. He had been telling the people for several days where he was going, who on his account were making great rejoicings. The sports of the Holi were all abandoned, and every one listened to Tukārāma.

Next day, as he was preparing to go to heaven, he sent a message to Avalī asking her to accompany him. She refused, saying she was pregnant, and asking who would take care of the children, &c. Tukārāma now quitted the temple. Still the people asked: "Where is he really going?" Some said to Kāśī, some said to Badrikāśram (Haridwār).

Tukārāma proceeded to the bank of the river Indrayani, and composed certain *abhangas*. He took farewell of all. Then a heavenly chariot, brighter than the sun, appeared; the eyes of all around were blinded as if by lightning. In this chariot Tukārāma sat down, and ascended to heaven (Vaikuntha). The holy men in the company saw a path into heaven; they heard bells ringing, and heavenly choristers (Gandharva) praising God. When the chariot had disappeared, they looked around—their eyes being no longer dazzled—but Tukārāma appeared not on earth. Then they began to mourn. How could I tell in this book their great lamentations—great as the ocean? Everywhere they sought for Tukārāma, but they sought in vain.

In the Saka 1571 the 2nd day of dark moon of Phalgun, Monday, at 4 *ghatikās* in the morning, the *guru* of the world, Tukā, disappeared.

All the men continued waiting until evening, expecting his return. Afterwards the most part departed, but his 14 disciples continued fasting for 3 days. On the 5th day of the month, his *tāl* and cloak fell down;

whereupon they departed, and having bathed went to the temple. Multitudes came to see the *tál* and cloak. They celebrated none of the rites for the dead; they knew from these messengers that Tukaráma was alive.

Tukaráma had promised, while yet on earth, to a Lingayat Wáni to appear to him at his death. Accordingly when the Wáni felt his death approaching, he sent to Dehu for Ramesvar, Tukaráma's younger brother, and his younger son. When they arrived, Tukaráma appeared. The Wáni alone perceived him and made obeisance to him and put sweet-smelling powder on his forehead, and garlands on his neck. The two then spoke together, and all around marvelled, for they saw nothing but the garlands of flowers, which seemed as if suspended in the air.

To faithful men Tukaráma still appears. Of this we have many witnesses. To Nilobá Gosavi of Pimpalner, to Bahinábái, and Gangádhari he appeared in vision, and gave them instruction. This Tukaráma, the friend of the world, the *sat guru*, has been found by us. He dwells in the hearts of all. Through him has this book been composed.

ART. II.—*A descriptive Account of the Fresh-water Sponges in the Island of Bombay, with Observations on their Structure and Development. (Genus SPONGILLA.)* By H. J. Carter, Esq., Assistant Surgeon, Bombay Establishment.

Since my "Notes" on these Sponges were published * I have made many more observations on them, and have extended my enquiries into their structure and development, so as to be able to offer a more accurate account of them than I could formerly. I have also ventured to name four out of the five species I have described, because they either do not appear to have hitherto been met with, or if before noticed, have not had their specific differences described with sufficient minuteness for their present identification. The only species which I think I have recognized, is *Spongilla friabilis* (Lam.) that kind so admirably described by Dr Grant; † but even here the point on which I have founded my distinctive characters, viz. the form of the spicula round the seedlike bodies, has not been mentioned with that minuteness which renders my recognition of it entirely satisfactory. So far as actual observation and the information I have derived from the descriptions of other, extends, all the species of

* Trans. Med. and Phys. Soc., Bombay, No. VIII.

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† Edinb. Phil. Journal. Vol. XIV p. 270.

spongilla which have hitherto been described, appear to be so amorphous, that without a knowledge of their minute structural differences, they are irrecognizable. Had this fact been formerly established, the same course which I have pursued for their specification, would in all probability have been adopted from the beginning; but with only two species, *spongilla fluviatilis* and *lacustris* and their varieties *, the genus appears to have failed from its insignificance to have obtained that attention which would have led to a description of the minute differences now required.

Not so with the nature of *spongilla*, that has been a disputed point ever since it was first studied; its claims to animality or vegetability with those of the other sponges, have been canvassed over and over again by the ablest physiologists, and yet remain undecided; still, this subject does not appear to me to have been viewed in a proper light, for late discoveries would seem to shew that there exists no line of demarcation between the animal and vegetable kingdoms, but that on the contrary the one passes by gentle and at last imperceptible gradations into the other. From the existence of cells as the principal component parts and as the elaborators of the most complicated forms of animal and vegetable structures, and the intimate connection that obtains between these little organisms in both kingdoms in their isolated and independent existences and in their simplest composite forms, of which I take *spongilla* to be one, the time appears to have arrived for abandoning the question of the animality or vegetability of *spongilla*, for the more philosophical consideration of the position it holds in that transitional part of the scale of organized bodies, which unites the animal and vegetable kingdoms.

Hitherto only five species of *spongilla* have been found in the island of Bombay; they are the following—

1. *SPONGILLA cinerea* (H. I. C.). Flat, surface slightly convex, presenting gentle eminences and depressions. Vents situated in the depressions, numerous, and tending to a quincuncial arrangement. Color darkly cinereous on the surface, lighter towards the interior; growing horizontally, in circular patches, which seldom attain more than half an inch in thickness. Texture compact, fine, friable. Structure confused, fibro-reticulate; fibres perpendicular, densely aggregated and united by transverse filaments. Seed-like bodies spheroidal,

* Johnston's Brit. Sponges, Synopsis p. 250.

about 1—63d. of an inch in diameter, presenting rough points externally. Spicula of two kinds, large and small; large spicula slightly curved, smooth, pointed at both ends, about 1—67th of an inch in length; small spicula slightly curved, thickly spiniferous, about 1—380th of an inch in length. (Plate I. Fig 5.)

Hab. Sides of fresh-water tanks in the island of Bombay, on rocks, stones, or gravel; seldom covered by water more than six months in the year.

Observations. While the investing membrane of this species remains intact, its surface presents a dark, rusty, copper-color, purplish under water. It never appears to throw up any processes, and extends over surfaces of two and three feet in circumference, or accumulates on small objects to the thickness mentioned. It is distinguished from the other species by its color, the fineness of its texture, and the smallness of its seedlike bodies and spicula.

2. *Sp. friabilis?* (Lam). Amorphous, surface irregularly convex, presenting low ridges or eminences. Vents situated on the latter, large, crateriform. Color, bright green on the surface, faintly yellow towards the interior. Growing in circumscribed masses, on fixed bodies, or enveloping floating objects; seldom attaining more than two inches in thickness. Texture loose, friable. Structure confusedly fibrous, reticulate, sometimes radiated. Seedlike bodies spheroidal, about 1—29th of an inch in diameter, presenting smooth points externally. Spicula of two kinds, large and small; large spicula, slightly curved, smooth, pointed at both ends, about 1—67th of an inch in length; small spicula also slightly curved, smooth, pointed at each end, about 1—126th of an inch in length. (Plate I. Fig. 3.)

Hab. Sides of fresh-water tanks in the island of Bombay, on rocks, stones or gravel; or temporarily on floating objects; seldom covered by water more than six months in the year.

Observations.—The color of this species is bright green when fresh, but this fades after it becomes dry. It seldom throws up projections much beyond its surface; does not appear to be inclined to spread much; and is matted and confused in its structure towards its base, and round its seedlike bodies. From the other sponges it is distinguished by the smooth spicula which surround its seedlike bodies and the matted structure just mentioned. Its green color combined

with the smoothness of its spicula, both large and small, is useful in distinguishing it from the other species, but without the latter it is deceptive, because *Sp. alba* and *Sp. plumosa* become green under certain circumstances. It appears to be *Sp. friabilis* (Lam.) from no mention having been made by Dr. Grant, (in his description of this species)* of the presence of any but smooth pointed spicula in it, and the appearance of "transparent points" studding the surface of its seedlike bodies, which is not observable in any of the other species, wherein the small spicula are spiniferous or stelliferous.

3. *Sp. alba* (H. I. C.). Flat or elevated, surface slightly convex, presenting gentle eminences and depressions or irregularly formed projections. Vents large, scattered. Color yellow, growing horizontally, in circumscribed masses or in irregular patches, encrusting objects, seldom attaining more than an inch in thickness. Texture coarse, open. Structure reticulated. Investing membrane abounding in minute spicula. Seedlike bodies spheroidal, about 1—30th of an inch in diameter, presenting rough points externally. Spicula of two kinds, large and small; large spicula slightly curved, smooth, pointed at each end, about 1—54th of an inch in length; small spicula also slightly curved, thickly spiniferous, or pointed at each end; the former pertaining to the seedlike bodies, are about 1—200th of an inch in length; the latter pertaining to the investing membrane, are more slender and a little less in length. (Plate I. Fig 4.)

Hab. Sides of the fresh-water tanks in the island of Bombay, on rocks, stones, gravel, or temporarily on floating objects. Seldom covered by water more than six months in the year.

Observations. This species is frequently found spreading over the flat surfaces of rocks to a considerable extent, (like *Sp. cinerea*,) without throwing up any processes; on the other hand it is also found in circumscribed portions throwing up irregularly formed, ragged projections, of an inch or more in length. It surrounds floating objects, such as straws, or binds together portions of gravel, showing in this latter state a greater degree of tenacity than any of the other species. In structure it is a coarse form *Sp. cinerea*, but differs from it in color, as well as in the size of its seedlike bodies and spicula; possessing at

* Endin. Phil. Trans, Vol. xiv pp. 274 and 279.

the same time that peculiarity which distinguishes it from all the other species, of having numerous small spiniferous spicula in its investing membrane, which when dry, gives it that white, lacy appearance, which has led me to propose for it the specific term of *alba*.

4. *Sp. Meyeni* (H. I. C.). Massive, surface convex, presenting large lobes, mammillary eminences, or pyramidal, compressed, obtuse or sharp-pointed projections, of an inch or more in height, also low wavy ridges. Color yellow. Growing in circumscribed masses, seldom attaining more than three inches in height. Texture fine, friable, soft, tomatose towards the base. Structure fibrous, reticulated, radiated. Seed-like bodies spheroidal, about 1—47th of an inch in diameter, studded with little toothed disks. Spicula of two kinds, large and small; large spicula slightly curved, smooth, pointed at each end, about 1—63rd of an inch in length; small spicula straight, sometimes slightly spiniferous, terminated by a toothed disk at each end, about 1—422nd of an inch in length. (Plate I. Fig. I.)

Hab. Sides of the fresh-water tanks in the island of Bombay, on rocks seldom covered by water more than six months in the year.

Observations. I have never observed this species either enveloping floating bodies, or growing any where but on rocks, in circumscribed portions. It varies like the other species in being sometimes more, sometimes less firm in texture. No other species resembles the official sponges in external appearance so much as this when fully developed and free from foreign substances. It is distinguished from the foregoing by the regularity of its structure, its radiated appearance interiorly, the form of its small spicula, and the manner in which its seedlike bodies are studded with little toothed disks; and from the following species, by the fineness of its texture, and the spheroidal form of its seedlike bodies. Probably it is the species alluded to by Dr. Johnston* which was examined by Meyen from the kind and arrangement of the small spicula round the seedlike bodies, which, however, in this species, are not cemented together by carbonate of lime as stated by Meyen, but by an amorphous silicious deposit. I have named it after Meyen, who has characterized it by the description of its minute spicula.

* Johnston's British Sponges p. 154.

5. *Sp. plumosa* (H. I. C.). Massive, surface convex, presenting gentle eminences and depressions, or low wavy ridges. Color yellow. Growing in circumscribed masses, attaining a height of two inches. Texture loose, coarse, resistant. Structure coarsely fibrous, reticulated, radiated, fibres fasciculated, spreading from the base towards the circumference in a plumose form. Seedlike bodies ovoid, about 1—22nd of an inch in their longest diameter, studded with little toothed disks. Spicula of two kinds, large and small; large spicula slightly curved, smooth, pointed at each end, about 1—54th of an inch in length; small spicula straight, sparsely spiniferous, terminated at each end by a toothed disk, about 1—292nd of an inch in length. (Plate I. Fig 2.)

Hab. Sides of fresh-water tanks in the island of Bombay, fixed or floating, seldom covered by water more than six months in the year.

Observations.—This is the coarsest and most resistant of all the species. As yet I have only found three or four specimens of it, and these only in two tanks. I have never seen it fixed on any solid body, but always floating on the surface of the water, about a month after the first heavy rains of the S. W. Monsoon have fallen. Having made its appearance in that position, and having remained there for upwards of a month, it then sinks to the bottom. That it grows like the rest, adherent to the sides of the tank, must be inferred from the first specimen which I found, (which exceeded two feet in circumference), having had a free and a fixed surface, the latter colored by the red gravel on which it had grown. I have noticed it floating, for two successive years in the month of July, on the surface of the water of one of the two tanks in which I have found it, and would account for its temporary appearance in that position, in the following way, viz. that soon after the first rains have fallen, and the tanks have become filled, all the sponges in them appear to undergo a partial state of putrescency, during which gas is generated in them, and accumulates in globules in their structure, through which it must burst, or tear them from their attachments and force them to the surface of the water. Since then the coarse structure of *plumosa* would appear to offer greater resistance to the escape of this air, than that of any of the other species, it is probable that this is the reason of my having hitherto only found it in the position mentioned. As *Sp. alba*, without its specific differences, is but a coarse form of *cinerea*, so *plumosa*, is without its specific differences, only a coarse form of *Sp. Meyeni*. The point which distinguish-

es it from all the other species, consists in the form of its seedlike bodies, which are *ovoid*. From *Sp. Meyeni* it is also distinguished by its surface being more even, its projections less prominent, and its tendency to spread horizontally more than to rise vertically.

General Observations.—It should be stated that in all these species except *cinerea*, their forms *en masse*, are so diversified and so dependent on accidental circumstances, that not one of them can be said to possess any particular form of its own, or to be distinguishable from the rest by it alone.

The measurements of the seedlike bodies and spicula are taken from the average of the largest of their kind; they differ a little from those mentioned in my "Notes,"* but this is owing to their having been the means of a larger number of measurements than I had an opportunity of making in the first instance. However great the number of measurements, it is probable, that when made at different times and from different sets of specimens the results will always somewhat differ; but this is a matter of very little consequence, as these points alone are not required for distinguishing characters.

The large spiculum is of the same shape in all the species, and is therefore of no use as a specific character. (Plate III. Fig. 6.)

STRUCTURE AND DEVELOPMENT.

The Fresh-water sponge is composed of a fleshy mass, supported on a fibrous, reticulated horny skeleton. The fleshy mass contains a great number of seedlike bodies in all stages of development, and the horny skeleton is permeated throughout with silicious spicula.

When the fleshy mass is examined by the aid of a microscope, it is found to be composed of a number of cells imbedded in, and held together by an intercellular substance.

These cells vary in diameter below the 1000th part of an inch, which is about the average linear measurement of the largest. If one of them be selected for observation, it will be found to be composed of its proper cell-wall, a number of granules fixed to its upper and inner surface, and towards its centre, generally one or more hyaline vesicles.

The granules are round or ovoid, translucent, and of an emerald or yellowish green color, varying in diameter below the 12,000th part of

an inch, which is the average linear measurement of the largest. In some cells they are so minute and colorless as to appear only under the form of a nebular mass, while in others, they are of the largest kind and few in number.

The hyaline vesicles on the other hand, are transparent, colorless and globular, and although variable in point of size like the green granules, are seldom recognized before they much exceed the latter in diameter. They generally possess the remarkable property of slowly dilating, and suddenly contracting themselves, and present in their interior molecules of extreme minuteness in rapid commotion.

When living and isolated, the sponge-cell is polymorphous, its transparent or non-granular portion undergoing the greatest amount of transformation, while its semi-transparent or granular part, which is uppermost, is only slightly entrained to this side or that, according to the point of the cell which is in the act of being transformed.

The intercellular substance, which forms the bond of union between the cells, is mucilaginous. When observed in the delicate pellicle, which with its imbedded cells and granules, it forms over the surface and throughout the canals of the sponge, it is transparent, but when a portion of this pellicle is cut from its attachments, it collapses and becomes semi-opaque. In this state, the detached portion immediately evinces a tendency to assume a spheroidal form; but whether the intercellular substance participates in this act, or remains passive while it is wholly performed by the habit of the cells which are imbedded in it, to approximate themselves, I have not been able to determine.

Seedlike bodies. The seedlike bodies occupy the oldest or first formed portions of the sponge, never its periphery. They are round or ovoid according to the species, and each presents a single infundibular depression on its surface which communicates with the interior. At the earliest period of development in which I have recognized the seedlike body, it has been composed of a number of cells united together in a globular or ovoid mass, (according to the species), by an intercellular substance, similar to that just described. In this state, apparently without any capsule, and about half the size of the full developed seedlike body, it seems to lie *free*, in a cavity formed by a condensation of the common structure of the sponge immediately surrounding it. The cells of which it is now composed, appear to differ only from those of the full developed sponge cell, in being smaller,—in the colorless state of their

germs,—and in the absence of hyaline vesicles; in all other respects they closely resemble the sponge-cells, possessing also a like but more limited power of motion. (I do not however wish it to be inferred from this close resemblance, that I am of opinion that the seedlike body is but an aggregate of separately developed sponge-cells; on the contrary, there are always present among the cells of a piece of sponge which has been torn to pieces, many, which contain within them, (developing from their upper an inner surface,) a number of transparent cells of various sizes, not unlike the hyaline vesicles in appearance, but all adhering together in a mass. It may perhaps be one of these cell-bearing cells which becomes the seedlike body. They are distinguished from the common sponge-cell by the character I have mentioned, by their containing fewer granules, and by their greater transparency, but in every other respect they are exactly like the sponge-cell.) To resume however the subject of the development of the seedlike body,—it passes from the state just mentioned into a more circumscribed form, then becomes surrounded by a soft, white, compressible capsule, and finally thickens, turns yellow and develops upon its exterior a firm crust of silicious spicula.

Thus matured, its cells, (Plate II. Fig. 1. 6.) which were originally unequal in size, have now nearly all become equal, almost motionless, and a little exceed the average diameter of the largest sponge-cells; while their germs, (Plate II. Fig. 1. a.) which in the first instance so nearly resembled the granules of the sponge-cells, are now four or five times larger, and vary in diameter below the 3,000th part of an inch, which is the average linear measurement of the largest of their kind.

The capsule (Plate II. Fig. 1. f.) has now passed from its soft, white state, into a tough yellow coriaceous membrane, presenting in *Meyeni* and *plumosa* a hexagonally tessellated appearance, (Fig. 1. c.) on the divisions of which, rest the asteroid disks (Fig. 1. e.) of the vertically placed spicula (Fig 1. g.) which surround it.

In the two species just mentioned the spicula are arranged perpendicularly to the surface of the capsule, and the interval between them is filled up with a white siliceous, amorphous matter, which keeps them in position. Each spiculum extends a little beyond this matter, and supports on its free end a toothed disk, similar to the one on its fixed end which rests on the capsule; so that the external surface of the

seedlike body in *Meyeni* and *plumosa* is studded with little stellated bodies; while in the other species where there appears to be no such regular arrangement of these spicula, a number of smooth or spiniferous points is presented.

Development of Spongilla.—When the cells of the seedlike body are forcibly expelled from their natural cavity, under water, they are irregular in form and motionless, but soon swell out, (by endormose?) become globular, and after a few hours burst. At the time of bursting their visible contents, which consist of a mass of germs, occupying about two thirds of the cavity of the cell, subside, and afterwards gradually become spread over the bottom of the vessel in which they are contained. They are of various diameters below the 3,000th part of an inch (Plate II. fig 1. a.), which is the average linear measurement of the largest, and appear to be endowed with the power of locomotion in proportion to their size; that is to say, that, while the largest scarcely do more than turn over now and then, as the globules of the blood, the most minute are incessantly moving backwards and forwards, here and there, and assembling in crowds around the larger ones.

If a germ about the 3,000th part of an inch in diameter be selected for examination, it will be observed to consist of a discoid, circular, well defined, translucent cell, which is green or yellowish green at the circumference, but becomes pale and colorless towards the centre. This cell appears to be again surrounded by a colorless transparent capsule, the nature of which is unknown to me, and I am not altogether certain of its real existence.

The green color is hardly perceptible in germs measuring less than the 18,000th part of an inch in diameter; below this they all appear to be colorless.

A few days after the germs have been eliminated, they for the most part become parcelled out into insulated groups, and united together by a semi-transparent mucilage. In this position the contents of the largest, which resemble the endochrome of the cells of *confervæ*, undergo a change, becoming nebulous towards the circumference, pellucid in the centre, and then nebulous throughout. The largest germs then disappear gradually, and their disappearance is followed by a successive development of proteans or active polymorphic cells. These proteans for the most part, do not exceed in their globular or passive state, the diameter

of the germs which have disappeared, and a successive development of them continues to take place from the contents of the same seedlike body for two or three months after their elimination. There are some proteans present, however, much larger, exceeding even the 800th part of an inch in diameter, which always make their appearance under the same circumstances, but they are not so numerous; the most numerous are those which average in diameter the 3000th part of an inch. The form assumed by the latter when in a state of activity is that of the diffuent protean, (Plate II. fig 2. e.), which in progression throws out globular or obtuse expansions of its cells; that of the largest, the denticulated protean (fig. 2. d.), which in progression shoots out digital or dentiform processes; and that of the smallest, the vermiform protean (fig. 2. f.), which progresses after the manner of a worm.

They are all, (like the cells of the sponge) composed of a cell-wall, within which are round or ovoid, green, translucent granules, varying in size and number; and one or more hyaline vesicles.

The green granules although appearing to move over the whole surface of the protean in its active state, are, nevertheless, when it is in its globular or passive state, found to be confined to the upper and inner part of its cell-wall. Sometimes these granules, from their smallness, can hardly be recognized individually, and only appear in the form of a nebular mass; this is frequently the case in the diffuent proteans and in those inferior to them in size; at other times, they are few in number and all the largest of their kind.

The hyaline *contracting vesicle*, of which there is seldom a plurality in the smaller proteans, appears to be uninfluenced in its presence or development by the state of the green granules, since there is almost always one at least, present, and in the enjoyment of great activity.

Such are the changes in the contents of the seedlike body which are witnessed, under this mode of development, with reference to the germs; we have now to turn our attention to the semi-transparent mucilage, which holds the germs together in their insulated groups, or binds them down singly to the surface of the vessel in which they are contained.

This semi-transparent mucilage appears to be identical with the intercellular mucilage of the sponge; it exhibits the same phenomenon of ever undergoing a change in shape, but as I have said before, I am not aware of its possessing this property, independently of the presence of

the cells and minute germs which are contained in it; neither do I know how it comes into existence, i. e. whether it be the product of the germs themselves, or whether it be eliminated with them, in a more elementary transparent and invisible form, from the cells of the seedlike bodies. Be this as it may, threads of it soon appear in straight lines extending over the surface of the watch-glass from portion to portion (Plate II. fig. 2. h.), and from object to object starting off from different points of an isolated germ—or from any point of a thread of it already formed—sometimes disposed in a flat reticulated structure over a spiculum, or on the surface of the glass—occasionally as broken portions like the ends of threads thrown together without union or order, and not unfrequently bearing minute germs in their course either at irregular distances from each other, or arranged like a string of beads.

It might be as well to notice here that the yolk-like contents of the dried seedlike body, with but slight modifications, undergo the same changes as those of the fresh one. If the former be divided with a sharp knife or lancet, and a portion of its contents picked out on the point of a needle and put into water, it swells out after a few days, into a gelatinous mass; its component parts, i. e. its germs and semi-transparent mucilage, begin to evince signs of active life,—a successive development of proteans follows and threads of the semi-transparent mucilage shoot over the surface of the watch-glass in the manner I have just described.

So far the elements of the sponge are developed, from the contents of the seedlike body after forcibly expulsion, we have now to examine them after having issued in their natural way.

If a seedlike body which has arrived at maturity be placed in water, a white substance will after a few days be observed to have issued from its interior, through the infundibular depression on its surface, and to have glued it to the glass, and if this be examined with a microscope, its circumference will be found to consist of a semi-transparent substance, the extreme edge of which is irregularly notched or extended into digital or tentacular prolongations, precisely similar to those of the protean, which in progression or in polymorphism, throws out parts of its cell in this way. (Plate II. fig. 3. c.). In the semi-transparent substance, may be observed hyaline vesicles of different sizes, contracting and dilating themselves as in the protean (fig. 3. d.), and a little within it the green granules so grouped together (fig. 3. e.) as almost to enable the practised eye to distinguish *in situ*, the passing forms of the cells to which they belong;

we may also see in the latter, their hyaline vesicles with their contained molecules in great commotion, and between the cells themselves the inter-cellular mucilage. (fig 3. f.).

If this newly formed sponge be torn up, its isolated cells assume their globular or passive form or become polymorphous, changing their position and their locality, by emitting expansions similar to the proteans or polymorphic cells developed after a forcible expulsion of the contents of the seedlike body, and differing only from them in being more indolent in their movements.

Habits of the Sponge-cell.—In describing the habits of the sponge-cell so far as my observations extend, I shall first confine myself to those which are evinced by it, in, or when torn from, the fully developed structure of the sponge, and subsequently advert to the habits of the polymorphic cells or proteans, which are developed from the contents of the seedlike body when forcibly expelled.

The sponge-cell when *in situ*, is ever changing its form, both partially and wholly; its granules also are ever varying their position with, or independently of the movements of the cell, and its pellucid vesicle or vesicles, dilating and contracting themselves or remaining passively distended, and exhibiting in their interior molecules of extreme minuteness in rapid commotion. When first separated from the common mass, this cell for a short time assumes a globular form and afterwards, in addition to becoming polymorphic, evinces a power of locomotion. During its polymorphism it emits expansions of its cell-wall in the form of obtuse or globular projections, or digital and tentacular prolongations. If in progression it meets with another cell, both combine, and if more are in the immediate neighbourhood, they all unite together into one common globular mass. Should a spiculum chance to be in the course of a cell, it will ascend it and traverse it from end to end, subsequently quitting it or assuming its globular form, embrace some part of it and remain stationarily attached to it. The changes in shape and position of the sponge-cell and its intercellular mucilage are for the most part effected so imperceptibly, that they may be likened to those which take place in a cloud. Its granules however are more active, but there appears to be no motion in any part of the cell, excepting among the molecules within the hyaline vesicle, which in any way approaches to that characteristic of the presence of cilia.

It should be understood however that these remarks are not applicable to every sponge-cell, although fully developed, which appears in the field of the microscope, but rather a statement of what a sponge cell may evince, than one of what every sponge-cell does evince.

The polymorphic cells or proteans which appear in the watch-glass after the contents of a seedlike body have been forcibly expelled into it under distilled water, are much more active in their movements. Their cell-walls frequently assume the most fantastic figures, spheroidal, polygonal, asteroid, dendritic, &c. Their green granules move backwards or forwards, to this side or to that with great activity, as the part of the cell to which they are attached is entrained in one direction or another; while their hyaline vesicle or vesicles (in progression) appear occasionally in every part, not only of the body of the cell, but in its tubular prolongations. The contraction of the hyaline vesicle seems to take place most frequently when it arrives at the posterior extremity, that is according to the direction in which the cell is progressing; next in frequency, at the sides, seldom in the anterior or central part of the mass. When contraction takes place it is effected more or less completely, more or less suddenly; if complete, a dark speck or opacity marks the original position of the vesicle, in the centre of which, if watched, it may be observed to re-appear, and as it is carried forward in the movements of the cell with the portion to which it is attached, it gradually regains its original size, and returning in due course to the point from which it started, again contracts as formerly.

In progression, some of the large proteans developed in the way just mentioned appear to be conscious of the nature of certain objects which they encounter in their course, since they will stop and surround them with their cell-wall. It is not uncommon to see a portion of a spiculum in the latter position (Plate III fig. 1.) the larger germs of the sponge itself, the body of a loricated animalcule, the 900th part of an inch in diameter (fig. 2.) on which the pressure exerted by the protean may be seen by the irregular form assumed by the animalcule the moment it has become surrounded. I once saw one of these proteans approach a gelatinous body, something like a sluggish or dead one of its own kind, and equal to itself in size, and having lengthened itself out so as to encircle it, send processes over and under it from both sides (fig. 4.), which uniting with each other, at last ended in a complete approximation of the two opposite folds of the cell-wall, throughout their whole extent, and in the

enclosure of the object within the duplicature. Even while the protean was thus spreading out its substance into a mere film, to surround so large an object, a tubular prolongation was sent out by it in another direction to seize and enclose in the same way, a large germ which was lying near it. After having secured both objects, the protean pursued its course, rather more slowly than before, but still shooting out its dentiform processes with much activity. It took about three quarters of an hour to perform these two acts.

Lastly, I have frequently seen it grapple with its own species; when, if the one it meets is near its own size, they merely twist round each other for a short time and then separate; but, when it does not exceed the sixth or eighth part of its size, then there is much struggling between them, and the smaller one escapes, or is secured by the aid of the digital prolongations of the larger one, and enveloped as the object before mentioned in a fold of its cell-wall.

On one occasion I witnessed a contest between two proteans, wherein the large one, after having seized the smaller one with its finger-like processes, passed it under its body, so as to cause it to lie between itself and the glass. For a moment the small protean remained in this position, when the cell-wall raised itself over it in the form of a dome, in which so formed cavity the little protean began to crawl round and round to seek for an exit; gradually however the cell-wall closed in beneath it in the manner of a sphincter, and it was carried up as it were into the interior of the cell, securely enclosed in a globular transparent cavity resembling a hyaline vesicle, but much larger (Plate III. fig. 8); it then attached itself to the upper part of this cavity, assumed a globular form, became opaque and motionless, and the larger protean took on its course.

Such are a few of the habits evinced by the sponge-cell, developed in its natural way and by the process I have mentioned.

Now, although no doubt may exist in the mind of the reader as to the identity of the sponge-cells developed in the natural way, and most of those developed from the contents of the seed-like body when forcibly expelled; yet it may be a question with him, whether *all* the proteans developed by the latter method come from the contents of the seedlike body, and therefore whether the proteans whose habits I have just been describing, which slightly differ from those of the sponge-cell, taken from its natural structure (only so far as this, however, that I have not seen the like evinced by the latter), have not been developed from some other source.

All that I can say in answer to this question, is, that although the proteans, which have evinced the remarkable habits I have described, are larger than the sponge-cell, more active in their component parts, more active as a whole, and appear to possess a greater share of intelligence; yet their general aspect and component parts being the same, their constant appearance in the watch-glass with the other polymorphic cells in the progress of the development of the contents of the seedlike body after forcible expulsion, when they are nearly as numerous as any other form of the protean cells then present, together with the fact, that the sponge-cell *itself* frequently contains pieces of confervæ within duplicatures of its cell-wall, and other foreign matters, just as these proteans include within the duplicatures of their cell-walls the objects I have mentioned, leaves me no conclusion to come to so reasonably, as, that the proteans or polymorphic cells so developed are but a higher condition of the sponge-cell met with *in situ*. How they obtain this condition, whether it be from the peculiar circumstances under which they are developed or whether it be the development peculiar to a particular class of cells of the same animal, are queries for future inquiry to determine.

Next to the development of the fleshy substance, comes that of the horny skeleton and its spicula, of which little more has been made known to me by my observations, than has been published by others who have already directed their attention to the same subjects. I have not had time to continue my investigation beyond the development of the fleshy substance, which is the utmost to which the contents of the seedlike body when forcibly expelled reaches; although from my "Notes" it would appear that it went farther, for I have therein stated, that I had seen the semi-transparent mucilage take on an arrangement, in form and disposition like that of the spicula in the skeleton; but this was an illusion, for I afterwards found out, that this appearance had arisen from the semi-transparent mucilage having attached itself to a series of minute scratches on the surface of the watch-glass.

My impression, however, is that both the horny skeleton and its spicula are formed in the intercellular substance, and not within the cells.

The spicula are membranous and at an early period of their development pliable, they afterwards become firm and brittle. If they be exposed to the flame of a blow-pipe many of them swell out towards the middle or one end into a bulb, like that of a thermometer. This is more particularly the case with spicula of *friabilis*, than with those of any

of the other species. They are hollow and the form of their cavity corresponds with that of their own form, being widest in the centre and narrow towards each extremity. Sometimes they contain a green matter like the endochrome of cells of *confervæ*.

Growth.—This only takes place during the time *spongilla* is covered by water, which in the tanks of Bombay is not more than eight, or at the farthest nine months out of the year, but the duration of its submergence of course again varies with the position it occupies on the sides of the tank. Its increase however appears to be most rapid in September and October. i. e, about two months after the tanks have become filled; subsequently it appears to go on more slowly. During the season of its growth, or while it is under water, it may extend from a portion, not more than a few lines in diameter, over a surface two or three feet in circumference, or it may evince no disposition whatever to advance beyond its original bulk throughout the whole season. It increases in size by successive additions to its exterior. To whatever extent this increase may reach, either vertically or horizontally during the first season, (assuming that it commenced from a central point or germ,) but few seedlike bodies are developed in it, and these few, as I have before said, are found in the centre or first-formed portion. The next year the development of its fleshy substance appears to commence from these seedlike bodies, which a few weeks after it has again become submerged, pour forth their contents over the last year's skeleton, and reaching its circumference develop a new portion; and in this way, by successive additions, it gradually increases in bulk, while the seedlike bodies accumulate about its centre, till at length it becomes based on a mass of them, the lowermost of which merely consist of the refuse of those which have fulfilled the purpose for which they were originally destined.*

Connected with the growth of *spongilla* is also the following fact which presented itself to me and which is interesting, inasmuch as it seems to point out, that germs or full developed cells of it abound in the water of the tanks, independently of those which exist imbedded in their natural structure, viz. One day I observed a few fesh straws floating together on the surface of

* Dutrochet has noticed the fact, that in a piece of *Spongilla* which he kept in water for some months, and which contained seedlike bodies, all the soft parts died, became putrid, and dissolved away during the winter, and that in the following spring, the fleshy substance became renewed. *Memoirs pour servir a l'Hist. Anat. et Physiol. des Vegetaux et des Animaux.* t. II. p. 436.

the water of a tank which abounded with several species of *spongilla*; they had been accidentally thrown there, but before they began to change color from putrescency, and therefore but a few days after they had been in the water, a growth of *spongilla alba* took place around each straw separately, which soon increased to the thickness of half an inch. I do not remember to have seen another instance of such rapid growth, and the freshness of the shaw proved this rapidity, for in this country in changes color a very few days immersion.

Although I was perfectly aware that *spongilla* might be uncovered by water for many months in the year and still retain its vitality, yet I wished to see if this would be the case after the interval of *more* than a year. I therefore placed some portions, which I had kept for this purpose, in tanks supported on bits of cork, and others on stones from which they had been undetached; but from some cause or other, whether from the partial putrescency which its dry fleshy substance subsequently underwent, or from this being present in a larger quantity in sponges taken out of the water in their living state and carefully preserved, than in those exposed to the sun and winds on the dry rocks throughout the greater part of the year, or from both combined, the shrimps and crabs were attracted towards the former and devoured them with rapacity, while they left the latter untouched; so that I was at last compelled to enclose a portion in a gauze-wire case, which was kept three or four feet beneath the surface of the water for several months. This portion was fixed on a stone, in the position it had grown, and when the case was taken up, it was found to have exceeded by many times its original bulk, was covered with its natural pellicle and in the active performance of all its vital functions.

Color—This in all, excepting *cinerea*, appears to be yellow.

The contents of the dried seedlike body are yellow, and although the new sponge when it first grows from them appears to be white, yet, if its cells be examined under a high magnifying power, their granules will be found to be translucent and yellow, closely resembling, under transmitted light, the color of chlorine.

Sometimes the green color of the yellow sponge is evidently owing to the presence of numerous solitary spherical corpuscles, at other times it is as evidently owing to the presence of an *Oscillatoria* or to *Diatomeæ*, but more frequently it appears to depend on the

presence of some coloring matter in or about its cells or granules themselves.

If some fresh cells of *cinerea* be examined under a high magnifying power, they and their contents will present the grey or lilac tint peculiar to the species, and in like manner the cells of yellow sponges which have become green, would seem to indicate a similar position of their coloring matter, which in this instance however generally appears to depend on an extra tint of green added to the cell-granules only.

Undoubtedly the sun has the power of turning the yellow sponges green, when they are taken from the tank and exposed in a glass vessel to his rays. At the same time the greater part of the sponges are exposed to the sun in their natural habitations throughout the whole year and yet with the exception of *friabilis* (which is always green, at least externally,) it is only here and there that you find a portion of the others taking on that color. Exposure to light again does not appear to have this effect on the small pieces of sponge grown from the seedlike bodies, if care has been taken not to admit the presence of other organisms, for they retain their white cotton-like appearance, although exposed to the sun for several days, i. e. from the moment they have become perceptible, up to the time that they perish from the want of nourishment in the distilled water in which they have been brought into existence.

It is impossible therefore under these circumstances to say without further research, if the green color is owing to an additional tint to the colouring matter of the cells or granules themselves, or to the presence of some foreign organism. Bory St. Vincent supposed it to be owing to the presence of *Anabina impalpabilis*,* but when it is due to an Oscillatoria or to Diatomeæ, or to solitary organic corpuscles they are distinctly visible; the green color however is frequently present when neither can be observed.

Among other experiments I instituted a set to ascertain if each species of *spongilla* had its peculiar form of *proteus*; and for this purpose, I took small portions of the yolk-like substance from the seedlike bodies of dried pieces of each of the sponges, and after having placed them in separate watch-glasses with distilled water, sat them aside for

* Johnston Brit. Sponges, foot-note, p. 156.

a few days until the proteans made their appearance.* I then began to compare the latter with one another in the different watch-glasses, but instead of finding that each species of *spongilla* had its peculiar form, I frequently found that the kind of portean I had determined on as proper to one species, was to be seen on the same or on the following day in a watch-glass containing yolk-like substance from the seedlike bodies of another species, and so on throughout all the glasses. It therefore would appear that in whatever the specific distinctions of the different proteans consist, too much stress must not be laid upon their external forms.

Respecting the position which *spongilla* holds among organized bodies, I feel incompetent to offer an opinion. All who know anything about the subject, are aware, that it is closely allied to both the animal and vegetable kingdoms, but it is for those who are best acquainted with that part of the chain which unites these two great conventional divisions, to assign to it its proper link.

I might here state, however, that we are indebted to Dujardin for the earliest notice of the resemblance of the sponge-cell to the *proteus*. †—Ehrenberg's name for the *proteus* is *amæba*; he has also applied the same name to the fifth family of his naked *Phytozoaria polygastrica*, Sect. 3, *Pseudopodia*, in which is included the genus *Amœba*.

Finally, I stated in the P.S. to my "Notes," ‡ that the *proteus* fed on its like after the manner of the *hydra*. The fact which induced me to make this assertion has been already mentioned (p. 43,) but the subject requires further investigation before it can be considered conclusive. It is difficult to conceive why the *proteus* should enclose within its cell-wall one of its own like, if it were not for the purpose of feeding upon, it; added to which the constant accumulation of refuse matter, which, issuing from the fæcal orifices, settles on the surface of the living sponge, when kept in a horizontal position, shews, that there is a continual elimination going on, of material, which is no longer useful in its economy and in connection with the fact to which I have alluded, would seem to point out the probability, that such *ejecta*, to a certain extent, consist of the cast-off parts of organisms from which the nutrient parts have been abstracted.

* Throughout all my experiments distilled water was used, and every precaution taken to preclude as far as practicable the introduction of foreign matter.

† Ann. des Sc. Nat. n. s. x p. 5.

‡ Ann. and Mag. Nat. Hist. loc. cit.

EXPLANATION OF THE PLATES.

PLATE I.

- Fig. 1. Section of *Spongilla Meyeni*, natural size.
 a. Small spiculum and seedlike body of the same, magnified.
 Fig. 2. Section of *Spongilla plumosa*, natural size.
 b. Small spiculum and seedlike body of the same, magnified.
 Fig. 3. Section of *Spongilla friabilis* ? natural size.
 c. Small spiculum and seedlike body of the same, magnified.
 Fig. 4. Section of *Spongilla alba*, natural size.
 d. Small spiculum and seedlike body of the same, magnified.
 Fig. 5. Section of *Spongilla cinerea*, natural size.
 e. Small spiculum and seedlike body of the same, magnified.

As none of these species possess specific forms, it has been deemed advisable to give sections of them, shewing their average and relative thicknesses,—the form of the projections from their surface,—and the peculiarity of their internal structures respectively.

PLATE II.

- Fig. 1. Magnified section of a seedlike body of *Spongilla Meyeni* showing, *f.* spicular crust, *g.* coriaceous capsule, *h.* internal cells, and *i.* infundibular opening.
 a. Germs of cells magnified,—the largest 1—3000th part of an inch in diameter.
 b. Cell of seedlike body containing germs, magnified.
 c. Portion of coriaceous membrane magnified, to shew hexagonal divisions and transparent centres.
 d. Small spiculum of *Spongilla Meyeni*, magnified.
 e. One of its toothed disks with central aperture, magnified.
 Fig. 2. Disk to shew the appearance which is presented on the surface of the watch-glass a few days after the matter of the seedlike body has been forcibly expelled into it, under distilled water.
 a. Denticulated proteus in progression, shewing its granules and hyaline vesicles, magnified.
 b. Passive state of the same, magnified.
 c. c. Germs parcelled out in semi-transparent mucilage, magnified.
 d. Denticulated proteus, magnified.
 e. e. Diffuent proteus, ditto.
 f. Vermiform proteus, ditto.
 g. g. Animalcules about 1000th part of an inch in diameter, which, to the almost complete exclusion of all other kinds, were generally present with the proteans, magnified.
 h. h. h. Threads of semi-transparent mucilage, ditto.
 Fig. 3. A magnified view of a newly formed portion of *Spongilla*, grown in distilled water from a seedlike body, as seen with Ross's microscope, under a compound power of $\frac{1}{4}$ of an inch focus.
 a. Sponge-cell with its granules and hyaline vesicles magnified, taken from the same portion.
 b. The same in a passive state, magnified.
 c. c. c. Marginal or thinnest portion of newly formed *Spongilla*, ditto.
 d. d. Form of its extreme edge, ditto.
 e. e. Hyaline contracting vesicles, ditto.
 f. f. Sponge-cells *in situ*, ditto.

PLATE III.

- Fig. 1. Magnified view of a denticulated proteus with a portion of a spiculum in a fold of its cell-wall.
2. Ditto, with a loricated animaleule and germ in ditto.
3. Ditto, shewing a small proteus attached to the side of a transparent cavity in ditto.
4. Ditto, in the act of surrounding a foreign body.
5. Most striking forms assumed by proteans, developed from the matter of the seed-like bodies (seen at various times), magnified.
6. General form of large spiculum, ditto.
7. Magnified view of spiniferous spiculum.

ART III.—*Remarks on the Origin and Languages of the Aborigines of the Nilgiris, suggested by the papers of Captain Congreve and the Rev. W. Taylor on the supposed Celto-Scythic Antiquities in the South of India (published in the Madras Journal of Literature and Science, Nos. 32 and 33, 1847).* By the Rev. B. SCHMID, D. D. Communicated by the Rev. Dr. WILSON, Honorary President of the Society.

NOTE BY DR. WILSON.

The accompanying short paper having been placed at my disposal by Dr. Schmid, I have great pleasure in submitting it to the Bombay Branch of the Royal Asiatic Society. It contains a most important testimony on a subject of very interesting inquiry connected with the Origin and Languages of the Aborigines of the Nilgiris, which no person, from personal acquaintance with that curious people and general philological lore, is more competent to satisfy than Dr. Schmid himself. In a communication which I have received along with it from that venerable Missionary, he mentions that altogether he has resided about six years on the Nilgiris, and that a good part of his time there has been spent in the acquisition of the language of the Todávares, a vocabulary and phrase-book of which he has prepared. The conclusions at which he has arrived, as will be seen from the paper now forwarded, are, that "the Todávar language is a genuine but very rude dialect of the ancient Tamul;" that "the Tamul, Todávar, Badagar, and Canarese languages are

links of a connected and unbroken chain of dialects of *one* language ;" that "the Todávar dialect is by far more closely connected with the Tamul than the Canarese ;" that "the race which afterwards split into Tamulians, Máleiális, Canarese, and Telingís, must be a Caucasian or Himálaya race, which must have immigrated into the plains of India very early ;" and that it was afterwards "pushed forward to the furthest south by other mountain tribes speaking Sanskrit" and what are now called "Hindi dialects, and immigrating at a later period." These conclusions are very much in accordance with those formed by most orientalists and ethnographers on more general grounds than those which have been *their* foundation. The notice taken of Dr. Rückert's discovery of the similarity of the Tatar and Támul dialects, may open up a new field of research for Indian philologists. I remember that when Professor Westergaard was with us in 1842, he stated it as his opinion, that striking analogies exist between these now far-separated languages.

J. W.

18th December 1848.

DR. SCHMID'S PAPER.

Captain Congreve inclines to the hypothesis, that the Todavers on the Neilgherries are exclusively the remains of Celto-Scythians immigrated into India and settled on "the Hills" at very early times, but the Rev. Mr. Taylor's Paper proves that those remarkable cromlechs and cairns with their contents, discovered by Captain Congreve on the Neilgherries, are quite similar to those in the low country, far away from "the Hills." Even this fact alone would prove, that the Todavers had the same Bud-dhistic ancestors as the Tamulians.

It is a question, whether quite similar cromlechs, similar rude cemeteries with pottery, with ornamental covers, figures of men on elephants, with bells, bulls' heads, &c. may not likewise be found in the interior of Africa, or of Arabia &c. whither in all probability a branch of the Himálaya races of Scythians or European Celts never penetrated and settled. Arts in their primitive rude state will be found everywhere to be pretty much alike, and so also certain practices of the most ancient nations, although otherwise widely different from each other. The Celts in the west, and those eastern tribes whom the more accurate Greek authors called Scythian, differ so greatly in many respects, that I am inclined

to consider the similarity of their ancient monuments as rather accidental although this similarity deserves careful attention and further enquiry.

Identity or analogy of idiom is acknowledged on all hands to be the most sure mark either of identity or of affinity of race. The linguist who has occupied himself with this branch of philosophical enquiry, has infallible rules, by which he can even ascertain, whether a language has been altered by violent interference of conquerors, or whether it has suffered no kind of alteration by such interference.

I came to "the Hills" with the preconceived idea, that the Todavers *are not Hindús*, but either descendants of Jews from the South of Arabia, whose kingdom was destroyed by Mahomed and who retired to the Malabar Coast, and were not further heard of, as the Royal Asiatic Society of Great Britain and Ireland stated in a series of queries, circulated about the year 1828,—or that they may have come from Persia. But when studying their dialect and collecting a vocabulary of nearly 500 words,—besides many phrases explanatory of grammar and construction,—I could find no trace of any Arabic or Hebrew roots, nor any thing like Sanscrit, Persian, Gothic or Celtic (though with the latter I am but very slightly acquainted); but the vocabulary, which by the help of the Basle Brethren labouring among the Burghers or Budaghers, I have lately completed by adding the words of the Budagher dialect, shows to a demonstration, that the Todaver language is a genuine but very rude, dialect of the ancient Tamul, the words of which are in many cases so greatly changed, but changed according to certain rules, that only a deeper study enabled me to recognize the identity of both languages,—and the comparison of these Todaver words with the Budagher and Canarese words, shows to evidence, that the Tamul, Todaver, Budagher and Canarese languages are links of a closely connected and unbroken chain of dialects of *one* original language, and that the Todaver dialect is by far more closely connected with the Tamul, than with the Canarese. And when by the liberal aid of the public for this purpose, a Brother of the Basle Society will be enabled to settle at Ootacamund, and to pursue jointly with me these enquiries, I trust it will be in our power to throw still more light on the earlier history of these most interesting Aborigines,—but what is of much greater importance, we hope to benefit them at the same time by Christian instruction, and to rescue their race from the danger of disappearing gradually and entirely from the earth.

In reference to a question, stated by the Rev. W. Taylor, in the Madras Journal of Literature and Science, No. 33, page 94, I have to state two facts :

Dr. Rückert, Professor of the Oriental Languages, in the University of Berlin, an eminent Poet, and a Philological genius, who is equally well acquainted with Sanscrit, Arabic, Persian and the Tatar dialects, and who studied Tamul, assisted in part by books which I lent him, in order to teach that language to some Dresden Missionaries, proceeding to Tranquebar and Mayaveram, told me afterwards with sparkling eyes, that the Tamul language has a remarkable analogy with Tartar dialects. This declaration strengthened my idea, which I had already long before conceived by comparing the genius of the Tamul language with that of other tongues, that that race or tribe, which afterwards split into Tamulians, Maleialies, Canarese and Telingas, must be a Caucasian or Himalaya-race and must have immigrated into the plains of India very early, intermingling with a Hamitic race which they found there, with thick lips and curled hair, like the far-spread Papuas. A short time ago I wrote to Dr. Rückert, requesting him, to send me a specification of this analogy between the Tamul and the Tatar dialects.

The second fact is that, when in 1848, a Treatise of mine was read to the Ethnological Society in London, concerning the Tamulians and Todavers and the cognate tribes of India, one of the leading members of the Committee put questions to me founded on my Treatise, and after an hour's conversation, he declared that my views entirely coincided with his own, viz : that the original inhabitants of the Presidency of Madras had immigrated into India from the Himalaya, and were pushed forward to the furthest south by other mountain tribes speaking Sanscrit and Hindi dialects, and immigrating at a later period ; just as the Celtic tribes had been successively pushed to the furthest west by the subsequently immigrating Teutonic and Slavonic races.

And that the Huns (not before 200 A. D.) and other Tataric (Scythian) tribes have entered and ravaged India, coming down from the Himalaya-mountains, is stated likewise in an earlier number of the "*Asiatic Researches*."

B. S.

ART. IV.—*On the Puneer plant of Khorasan.* By Assistant Surgeon J. E. Stocks, M. D., F. L. S. Communicated by the Secretary. (With a Plate).

The berries, called by the Arab Physicians حب الكانج *Hub-ul-Kekinj* or *Kaknij*, have been referred by most writers to a plant growing in Germany, Italy, and Greece, which was called by Tournefort (from the Arabic name) *Alkekengi Officinarium*, and by Linneus, *Physalis Alkekengi*, and the same plant is identified with the *σφυραρος αλικεσαβος*, mentioned by Dioscorides.

Dr. Royle, induced no doubt by the geographical position of this plant being unfavourable to the above identification, has suggested the *Nicandra Indica* (R. & S.), referred more properly to the genus *Physalis* under the name of *Physalis Indica* (Lam.), and which Loureiro called *Physalis Alkekengi*.

Dr. Royle also throws out the idea that the widely distributed *Physalis somnifera* was the original *Kakinj*, and that the *Nicandra Indica* was merely used as a substitute; for he observed that in the Eastern *Materia Medica*, plants with similar aspects are generally confounded and used indiscriminately, as might be expected. It may indeed be ventured as a general remark, that the genus is alone perceived by persons ignorant of Botany, and the knowledge of *specific* distinctions is one of the results of the study of that science.

It is most probable that a knowledge of the virtues, supposed or real, of species of the genus *Physalis*, was discovered independently by Physicians of different nations, and that the *Physalis Alkekengi* was the plant used by the Greeks.

If we consult Persian works on *Materia Medica*, such as the *Makh-zoon-ul-Adviych*, we find the following account of *Kakinj*, which is copied almost literally in the *Tofut-ul-momneen*. The synonyms are first noted, and we are informed that in the province of Fars it is called *Aroosuk pus purdah*, and about Shiraz *Kuchoomun*. In Greek it is called *Ousfudnoon*, in Syriac *Khumree murja*, in Turkish *Asheedoleon*, in Arabic *Towz-ul-murj* and *Hub-ul-yahood*, in Hindoostanee *Rajpootuka* and *Bingpoonka*, and in Latin *Halikabum* (or *Halekayum*). It is described as allied in nature and habit to the *Unub-ul-salib* (*Solanum*

nigrum), but its leaves are more firm and its branches become procumbent with age. Its flowers are white tinged with red, and its fruit is enclosed in a covering like a bladder (the vesicular calyx), which is green when young and red when ripe, and contains a kernel (meaning the true fruit) like a sepistan or a filbert, which when it ripens turns red also. Two varieties are noticed; one growing on stony ground, and one on cultivated land. The wild one has leaves like the apple, with a downy surface as if covered with dust. Its stem is fresh and herbaceous, and the whole plant is larger than the one growing in garden-ground. It differs also in having red flowers, and berries of a yellow hue with a tinge of red, and a calyx which turns yellow in fruit. In both, the fruit gathered when ripe and dried for use is the part employed in medicine. It is cold and dry in the 2nd degree, and is good for stomach and liver-diseases, jaundice, wind, heart-burn, gravel, stone, &c. &c. The above description of the inflated calyx, as also the name which the plant bears in the province of Fars, viz. *Bride-behind-a-curtain*, point out a *Physalis* as one at least, of the plants mentioned. But the large mountain variety with dusty leaves, and brown fruit, is most likely a distinct plant. And it is worthy of remark, that although the *Physalis somnifera* is common throughout Scinde, Beluchistan, and Afghanistan, yet a plant not belonging to that genus, (although bearing a general resemblance to it) is regarded the true Kakinj by those who have studied the Persian and Arabian writings on *Materia Medica*.

This is the plant so universally known through those countries by its more popular name of Puneer, Puneerbund, or Puneerbad, a plant in the natural order *Solanaceæ*, allied to *Physalis*, but distinct in its dioecious flowers and calyx which *closely* invests the fruit.

I subjoin the characters of the genus, and a few remarks on the species upon which it is founded.

PUNEERIA (*New genus.*)

Flowers dioecious by abortion.

Calyx 5-cleft, increscent but not inflated in fruit.

Corolla campanulate, with the divisions of the limb valvate in æstivation, and bent inwards where their tips join in the centre. Stamens five, inserted near the bottom of the tube of the corolla with tufts of hairs on each side of the filaments at their points of origin.

Ovary 2-celled with many-ovuled placentæ.

Style simple, stigma bilamellate.

Berry tightly invested by the calyx; its apex uncovered.

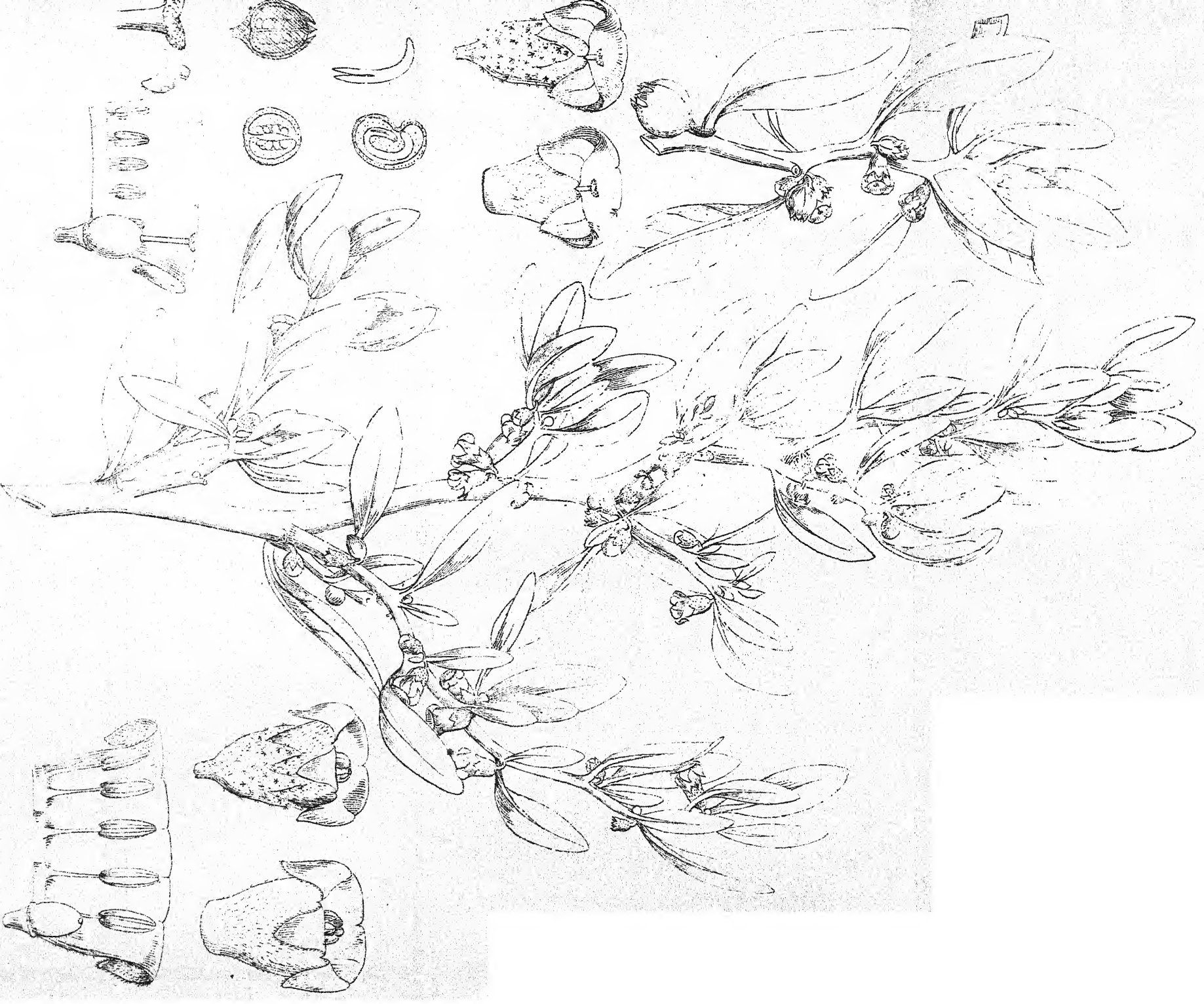
Seeds ear-shaped. Embryo bow-shaped or nearly ring-shaped, in the midst of fleshy albumen, with linear cotyledons and a long radicle.

An under-shrub, most densely covered with minute stellate hairs, arranged in tufts which form a short ash-grey covering over the whole plant. Leaves lanceolate-oblong, unequal at the base, of a thick tough texture, sometimes appearing to spring in pairs (pseudogeminate), with the upper and lower surfaces alike. Flowers diœcious, fasciculate, with the peduncles bending downwards. MALE PLANT.—Calyx shorter than the tube of the corolla. Stamens as long as the tube. Ovary rudimentary with no style. FEMALE PLANT.—Calyx as long as the tube of the corolla. Stamens rudimentary with exceedingly short filaments and with anthers effete and void of pollen.

PUNEERIA coagulans (J. E. S).

This plant is recognised at a considerable distance by its dusty ash-grey hue, which in the young leafy shoots has a bluish tinge. There is not a shade of green in the whole plant. It forms ramous bushes 1-2 feet high, flowering in February and ripening its fruit in March.

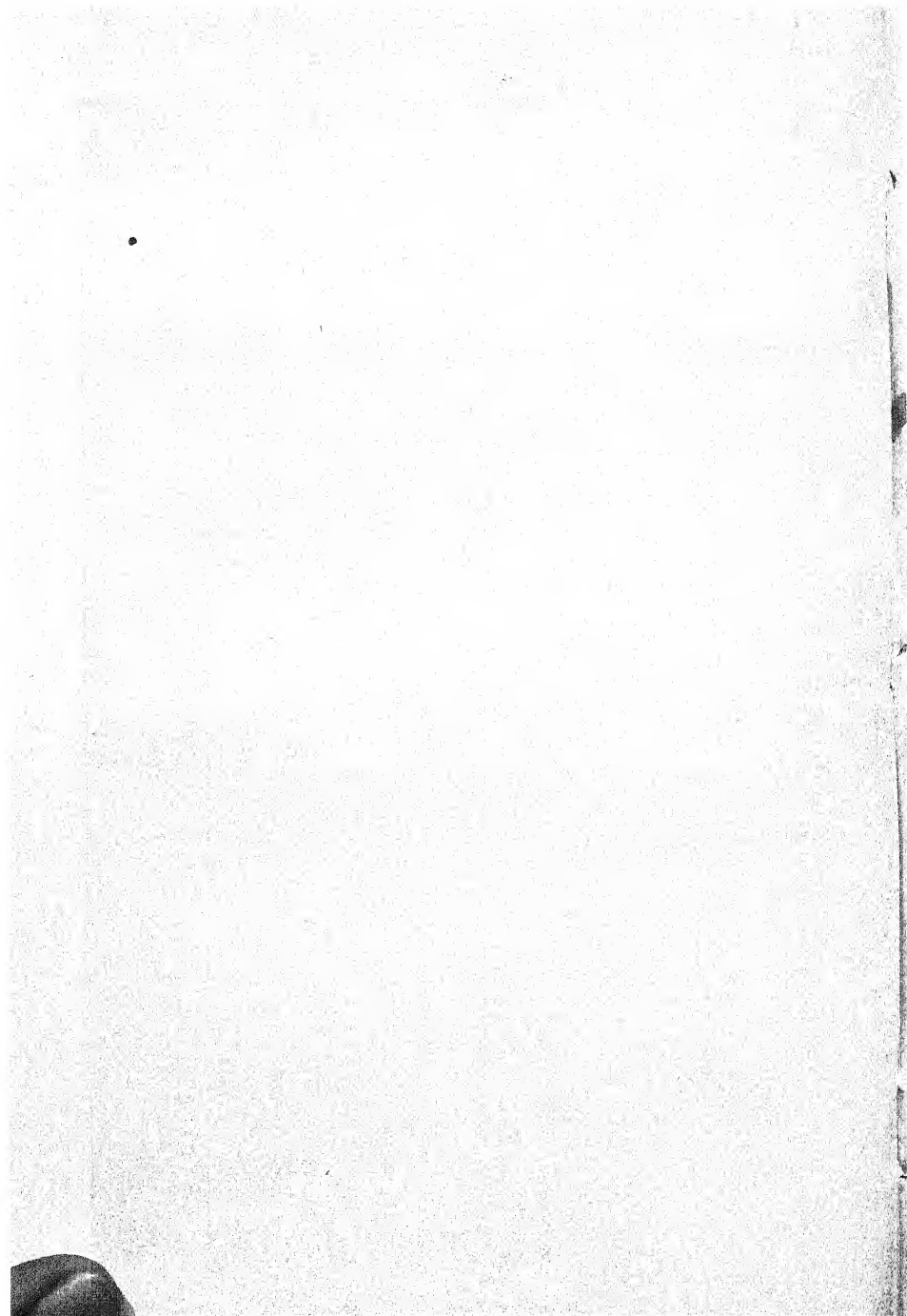
The natives are perfectly aware that some plants are male and others female, and they compare it to the Date-tree in this respect. The corolla is covered externally with close-set stellate hairs, but is smooth and of a sulphur-yellow colour internally. It differs from the corolla of *Physalis* in drying quite black and hard. The leaves also dry very stiff and hard. When fresh, their texture is somewhat leathery, with inconspicuous veins, and the two surfaces are alike in colour and venation. The ripe fruits are brown and shining on the surface, and are used as an emetic when fresh. When dried they are sold in the Scinde Bazars under the name of *پنیر جا فوت* *Puneer jà fotà* (Puneer cardamons), and are (as before stated) regarded the true Hub-ul-Kakinj of Arabian and Persian writers. They are used against indigestion, and windy complaints of the stomach, and enjoy an immense reputation in Scinde, Beluchistan, and Afghanistan. They are used in infusion either alone, or mixed with the leaves and twigs of the *Rhazya stricta* (Apocynaceæ) a peculiar and excellent bitter; well known in Scinde by the



W. Abraham, del.

Chenopodium sagittatum (L.E. 9)

Silene acaulis
arabensis (L.)



name of *Sihár* or *Shéwur*, which last is a corruption of its Pushtu name *Shwurg*. The dried berries are also used in Beluchistan and Affghanistan to make cheese (puneer), when kid's stomach cannot be procured. Two or three of the berries are rubbed up with a little milk and this is stirred among the whole quantity intended for use. The milk is then warmed, and the coagulated mass being tied up in a hair-cloth, has its water expressed, and is finally hung up from the roof to drain and harden for use. This cheese differs from Kroot, a somewhat similar preparation much used by the hill-people on long journies, as our common cheese does from skimmed-milk cheese, to wit, in containing the butter of the milk.

Forskall informs us (p. 47) that in Arabia, the *Solanum sanctum* is used to coagulate milk in a similar manner.

The plant is called *Sháprunga* about Peshawur, and *Khumzuray* about Candahar. It grows on hilly ground all over Beluchistan and may be found in waste places and rubbish heaps throughout Sindh. It is also found on limestone rocks about Hydrabad and elsewhere, where it is probably truly wild. It grows at Candahar (3,484 feet above the sea), and Griffith found it at Landi Khana in the Khyber pass (2,488 feet above the sea), and at Sera in the Punjab (Griffith's Journal p. 499, "*Physaloides* of Landi Khana").

So that we know that this plant extends in latitude from Kurrachee in 25 N. to 34 or 35 N. and in longitude from (at least) Kelat in 66½ E. to 73 or 74 E. It grows also from the level of the sea to 3,500 feet at least. And if it shall be found hereafter that this plant extends eastward into Mekran and South Persia, and along the Paropamisus towards Herat, it will be extremely probable that it was the original *Kakinj* of the Persian, as well as of the Khorasan, *Materia Medica*.

Plate. IV. *PUNEERIA coagulans*.—The female plant and its dissections are on the left, and the male plant and its dissections on the right of the plate. The dissections are magnified about three times, except the vertical and transverse sections of the ripe fruit, which are of the natural size.

ART. V.—*Notes and Remarks on Dr. DORN's Chrestomathy of the Pushtu or Affghan Language.* By Lieut. Burton, Assistant, Sindh Survey. (Communicated by the *Secretary*).

The Affghans, like most of the tribes whose dialects belong to the Indo Persian class, claim a high antiquity for their language. As Moslems and Orientals, they piously and graphically describe their Prophet as using Pushtú with the same facility as he could talk Arabic or Hebrew, Zend, or Syriac. On one occasion when Kháled Bin Walid was saying something in his native tongue, the Affghání Mohammed remarked, that assuredly that language was the peculiar dialect of the damned. As Khaled appeared to suffer much from the remark, and betrayed some symptoms of insubordination, the Prophet condescended to comfort him by graciously pronouncing the words "Ghashe lindá ráorá" i. e. bring me my bow and arrows. To doubt the truth of this tale would among the Affghans be considered positive impiety, for they not only firmly believe that Kháled was of their race, but also delight in tracing back to him the origin of their principal families. * He was, however, if history is to be credited, an Arab of the tribe of Koreysh.

The Affghans are too pious a people not to believe that Ali, the great knight-errant of Islám, visited their interesting country. Apropos of such Arabic names as the *Khaibar* Pass and *Ali* Masjid, they remark that the latter was originally a mosque founded by the great Imám, after his defeating in a wrestling bout, the daughter of Káfir, who had sworn to remain a maid until such time as she might meet with a man who could prove himself to be such. The fruit of the marriage which ensued, was a son called by the Affghans, the "Imám Hanifah," whose adventures, when in search of his father, are favourite themes of many a rude verse and still ruder tale.

Pushtú literature, like that of Sindh, the Panjáb, and Beluchistán, may be described as consisting of—

1st.—Poetry, either purely Erotic, or treating on Súfí or mystical subjects. The former generally appears in the form of Ghazaliyat and Kasáid, and belongs chiefly to the people of the towns and cities, as the

* See the 'Tazkirat of the celebrated Akhund Darwazah.

severity of rustic morals would always reject such compositions, however harmless. The Súfí poetry owes its spread to the celebrated effusions of Rahmán and Mirzá, for however unwilling rigid Moslems may be to adopt the tenets of Tasawwuf, few can withstand the charms of its mystic song.

2nd.—Tales, in verse and prose, but generally the former. Of these the most celebrated are—

1. Yúsuf and Zulaykhá.
2. Bahrám-i-Gúr, a Persian romance.
3. The Jangnámah, being a true and faithful account of the martyrdom of Husayn at Karbalá.
4. Saif ul Mulúk, (or Saifal, as he is generally called) and the Fairy Badi ul Jemal: a story in the Arabian Nights which, by some means or other, has overrun Sindh, the Panjáb, and Affghanistán.
5. Hir and Ranghá, the old Panjábí story.
6. Tamim i Ansári.
7. 'Adam and Durkhu, or as the lady is generally called "Durkhánay" with a species of endearment.
8. The Tale of Kuth ud din. This and the former are very characteristic stories of Platonic affection among the Affghans.

The above are all in verse; the only prose tale generally read is the Pushtú translation of the Ayyár i Dánish. One peculiarity may be remarked in all these productions, that the authors seem never to aim at pure Pushtú composition. Their vocabulary is more than three parts Persian and Arabic, and the more foreign words and idioms are introduced, (as in the Urdú of N. India) the finer the poetry is. Whereas take for instance the *Chef d'œuvre* of Sindhí composition, the *Risálo* of Sháh Abdul-latíf. Of the ten or twelve thousand couplets which that work contains, at least two-thirds will be in the purest Sindhí words and in the local idiom, displaying at the same time a richness of vocabulary, a variety of expression, and naiveté of style beyond all praise. The Pushtú metre also is invariably an imitation of some Persian measure (in modern * composition), whereas the Sindhí language possesses a peculiar kind of verse to which we must at least allow the merit of originality.

* The moderns in Pushtú poetry are the authors who flourished after the time of Rahmán.

These Pushtú tales, with all their faults and deficiencies, are intensely relished by both sexes and all classes. They form but a small item of the vast mass of tradition and legendary lore diffused through the wild and semi-nomadic population of central Asia.

3d. Religious Compositions, Divinity, Theology, &c. in verse and prose, as the Rashíd ul Bayán of 'Akhund Rashíd, and the Makhzan of Akhund Darwazah. The latter is peculiarly interesting, as bearing upon the subject of a sect which, had it not been so stoutly opposed, would probably have spread throughout the length and breadth of Khórásán.* Theological compositions are generally studied by women and children in the Pushtú language; by the latter as an introduction to the classical tongues, and by the former as very few of them are taught to read Arabic or Persian. Among men the usual course of education is as follows: the Student begins with Arabic Grammar and Syntax, then passes on to Logic, Rhetoric and Philosophy, and ends with Theology, Divinity, the Koran, &c. &c. Those who are unwilling or unable to master all these subjects, content themselves with merely reading Fikh (Theology) in Arabic: the less industrious study the sciences in Persian, and the lowest classes of Tálib ilm† read Pushtú works only.

* Lieutenant Leech in the Remarks, which precede his vocabulary of the Tirhai dialect, tells us that in one district the founder of the sect above alluded to, had 60,000 disciples.

Lieutenant Leech however entirely mistakes the religion of the Pir i Raushan. He was not a Shiah, but as the Dabistán informs us, a Súfi, who proclaimed himself to be a prophet and aimed at the establishment of a new faith. His celebrated work was the Khair ul Bayán written in Arabic, Persian, Hindi, and Pushtú, and said by him to have been received directly from the Almighty without the intervention of the Archangel Gabriel. It might probably be procured at Pesháwar from the Pir's descendants, who are there numerous; but I have hitherto failed in my attempts to get a copy. The name of the Pir i Raushan is still celebrated in E. Affghanistan and many are the dark stories told against him by the orthodox followers of Abú Hanifah. One of his couplets is generally quoted as a proof of the heretical nature of his tenets; it runs as follows. —

Mál o mulk wárah de Khudá i dé;

Dá halál hárám rághle de kamáh ?

Property and kingdom all are of God.

This "lawful and unlawful"—whence come they ?

† The Tálib ilm or Student in Affghanistan is very different from the same species usually so called in India and Sindh. Like the members of our European Universities in the middle ages, the Affghan Student carries about his sword and dagger, and is fonder of a broil than he is of his books. The duello of course is unknown, as the usual way to resent an insult is to draw a sword and cut the opponent down. As Mussulmans, they dare not openly indulge in the "wine and wassail," but the "emerald cup," in other words Cannabis sativa under the forms of bhang and charas, forms no contemptible succedaneum.

Epistolary correspondence (*inshá*) is almost universally carried on in Persian. Sometimes when writing to females, or in the Khatak and a few other clans, the vernacular is used.* Persian is the language of the *Daftars*, *Diwání* and all other official papers.

I cannot conclude this brief sketch of Affghan literature without an expression of regret that during our occupation of the country we took so little interest in what was around us, and that the first sensible work published in Pushtú should have appeared at St. Petersburg instead of at London or Calcutta.

Before commencing any remarks upon Dr. Dorn's publication, it may be as well to premise that I have studied only the Eastern or Pesháwar dialect, and have had few opportunities of conversing with the Hill people† or the Western Tribes.

The "*Chrestomathy*" well deserves its name; it is a successful collection of all the gems of the language, and scarcely omits a single author of celebrity. It is to be regretted that the extracts from *Mirza* are not more copious, as it is very difficult to procure the whole work, and many a *Mullá* in Affghanistan has never seen it. The Glossary is necessarily defective, as the only Affghan words which bear vowel points, are those furnished by *Muhabbat Khán*, and many of them are incorrect. It is clear that the author suspected this, as in many cases the pronunciation is not given in the Roman character, whereas in the Persian and Arabic words it is never omitted. In some letters this is a great disadvantage, as a colloquial knowledge of the language could not easily be acquired with the aid of the work in its present state. For instance, the letter *چ* *che*, (with three dots *above it*) is pronounced as *Z* in *Zán*, (*life*), as *S* in *Sáng* (*a wing*); and as *Ch* in *Chamyár*, (*a tanner*). Dr. Dorn moreover gives the sound as "*to*," and this I have never yet heard from the mouth of a Native.

In P. 390. *Aputah*,‡ *gen. Sing.* upside down, topsy turvy.

* Whereas in the *Sindhi* dialect they not only have a good translation of *Harkarans'* Form's, but also the *Mullas* even do not disdain to write to each other in their own tongues. We may readily account for the difference by recollecting the liberality of the *Kalhorá* family in patronizing *Sayyeds* and learned men, and the pride which they took in cultivating the language of their forefathers.

† Who like the *Bedouins* of Arabia speak the purest dialect.

‡ I have followed the style of orthography adopted in *Shakespeare's Dict.* The pages refer to Dr. Dorn's Glossary. The abbreviations are, *A.* for Arabic,—*P.* and *H.* for Persian and Hindostani,—and *S.* for Sanscrit. The others will easily be recognised.

P. 394. Adé, is the word used to a mother, like our "Mamma." Mor is the common word for a mother.

P. 401. Akor, is a walnut fr. H. akhrot.

P. 409. Uriyaz, is the common name for a cloud.

P. 411. Bátingan, is not a love-apple, but a brinjall (Solana melongena) in H. baingan in A. and P. bádangán and bádánján.

P. 412. Báhú, is not syn. with khalkhúl, the former being a bracelet and the latter in Ar. an anklet. Der. fr. Sansc. कर्कश an arm.

P. 419. Baurá, is the large black bee called in H. bhaunrá.

P. 426. Páru, is a snake-charmer.

P. 430. Pasát, is a mere corruption of fasád.

P. 433. Pukhtay, is a rib, synonymous with H. paslí.

P. 436. Tarú, is the name of the black partridge, and in some parts of the country means a jungle-cock, but never I believe signifying a woodcock or snipe.

P. Do. Tálá, appears to be a mistake for, or corruption of, the Persian word tálán.

P. 437. Tánbah, more generally tãnbah, is generally used to signify the fold or leaf of a door, not the door itself.

P. Do. Táwahwal, means to twist for the Persian táo, and the Sanscrit त्राट्. In Affghan-Persian the phrase "táo dádan" is constantly used.

P. 447. Tangah, generally signifies a coin in value about $\frac{1}{3}$ d of a rupee. The coin no longer exists: it is therefore a nominal value.

P. 452. Janí, is seldom used for a bowstring. Jáí جي is the common word, and is derived from the P. zih.

P. 452. Júbalawal, generally means to wound.

P. 454. Chár, is synonymous with the Persian kár and means any work, deed, &c.

P. 455. Chaghzi, is any fruit with an edible kernel, like walnut, almond, &c.

P. 457. Sár, is not synonymous with chár; it means information, knowledge, and is commonly used in the Sindhi dialect. It is originally Sanscrit—सार pith, essence, &c.

P. 458. Záewal, from záo a place, means to take up a place, position, &c. jáe giriftan in P.

P. 460. Súní, a woman's front hair, is always pronounced saní in the East (in Sindhi chuní is used); the back hair is called sare.

P. 468. Khachan, generally means dirty, foul, filthy.

P. 469. *Kharob*, is an adj. and means full (of water).

P. 472. *Khwákhay*, is a mother-in-law generally.

P. 477. *Khíh*, is a misprint for *Khom*, which is synonymous with the Persian *khúb*, good.

P. 478. *Dáral*, generally signifies to bite or tear with teeth. It may also mean to scold. It is derived from *darah*, the back teeth, in *H. dárh* from the *S*.

P. 479. *Dáo*, is an old Persian word and generally signifies betting or wagering. It is much used in the sense of "winning a wager."

P. 480. *Darghedal*, is generally pronounced *rg Jaredal*.

P. 484. *Dautar*, is a mere corruption of *daftar*: the adj. *dautari* is applied to the clans, who hold land as *Zemindárs*, and whose names are therefore enrolled in the Government *daftar*. About *Pesháwar* there are 7 well-known *Dantarí Khail*, viz.

1. *Momand*.
2. *Khalíl*.
3. *Dáúdzye*.
4. *Gigyáne*.
5. *Mámanzye*.
6. *Yusapzye* proper *Yúsufzye*, vulgar *'Isapzye*.
7. *Khatak*.

P. 490. *Ránjah*, is the general name of *súrmah* or native anti-mony.

P. 491. *Ráwastal*, is applied to leading or bringing animate objects; *ráoral*, of inanimates.

P. 493. *Rasawal*, is the causal of *rasídal*, and is therefore synonymous with the Persian *rásanídan*.

P. 498. *Zíkhah*, generally signifies a pimple on the face.

P. 499. *Zirgah*, generally *zarkah*, is the bird called by the Persians *Kabk i darí*; the grey or common partridge is *Tanzaray*, and the black variety, *Tárú*.

P. Do. The heart is generally pronounced *zrah*, not *zirah*, and *zargay* is a diminutive form of the same word.

P. 500. *Zam zamole*, is used as for instance, in carrying off the wounded from a battle-field, &c.

P. 501. *Zoral* is a verb derived from *zor*, and is synonymous with the Persian *z* or *dádan*.

P. 502. *Zahír*, is an Arabic word signifying sick, melancholy. It is commonly used in Panjábi e. g.

Te mār fakír *zahír* nún *khush hoyá parwár*.

And having slain the wretched fakír, the family was joyful.

P. 503. *Zezmah*, means the thickness of the eyelid, the part where antimony is applied.

P. Do. *Jámah*, signifies the jaw-bone.

P. 504. *Zhúyal*, in the E. dialect *joyal*, signifies to chew.

P. 506. *Spúr*, means dry bread, plain rice (without "kitchen") and met, hard words, rough speech, &c.

P. 507. *Stúní*, is the lower part of the throat.

P. 509. *Surizar*, is a mere corruption of *srahzar* i. e.; red zar, gold. The word *zar* is used in *Pushtú*, as well as in Persian, to denote either gold or silver.

P. Do. *Sarsáyah*, is not synonymous with *sarmáyah*. It means certain alms (of grain or money) distributed to the poor on the *Eed i Fitr*. In the *Rashíd ul bayán* we find—

Awwal zdah krah Sarsáyah de.

Learn (this) that first is the *Sarsáyah*.

P. 512. *Samsarah*, is the large kind of lizard called in Persian *Súsmár*, and in Ar. *Zabb* (ضب). In Affghanistan it is eaten by some classes, as the *Musallís* for instance, and *Firdausí's* celebrated lines tell us that the Arabs used it for food;

Arab rá be *jáyí rasíd ast kár*,

Ze *shír i shutur khúrdan o súsmár*.

*Kih, &c.**

P. Do. *Sendúrí*, is an adj. signifying vermilion or red-lead color, from the Sansc. *sindúr*.

P. 515. *Setí*, is, I believe, an error for *sati*, as the word is Sanscrit, and as such has not been altered by other nations. In Persia they call it *rám-satí*.

P. 516. *Shádú*, generally signifies an ape or baboon.

P. 516. *Shárbal*, is to churn.

P. 519. *Shrang*, is a clang, rattle, &c. as of money, &c.

P. 521. *Shindah*, is a "bad action."

P. Do. *Sholah*, is a corruption of the S. & H. *shálí*, paddy.

* I quote from memory, not having the passage at hand to refer to.

P. 535. Ghur-Kamánah, is a pellet-bow. The cross-bow is quite unknown in Affghanistan.

P. 536. Ghusháyah, is synonymous with the P. sargín, cow-dung.

P. Do. Ghul, is a low and indecent word for the human fæces, whereas "birár i insán" is an Arabic phrase little used except in medicine.

P. 538. Ghwundáre, generally signifies any round thing.

P. 540. Fasah, is a corruption of the Persian fâsh.

P. 546. Kalang, generally signifies revenue paid up in money, not in coin.

P. 548. Kásirah, is a most abusive term applied to females, and synonymous with the Persian kusí, and the Pushtú "ghuwalay," except that the latter is applied indiscriminately to both sexes.

P. 550. Kasoray, is a purse generally.

P. 551. Karak (not kurak), is the Persian name of a kind of quail, called in Pushtú, maraz مرز

P. 552. Krapedal, is to gnash the teeth, gnaw or chew from the imitative sound krap.

P. 553. Kishor, is the name of an animal like a jackal.

P. 555. Kund or kúnd, is a widower. Kundah or kúndah, a widow.

P. Do. Kandolay, is an earthen pot for drinking out of.

P. 556. Kútah is generally applied to the village, or (as we call them in India) Pariah dogs. Tází is a greyhound, and Nimchah a mongrel breed between the two. Spay is the generic term for a dog, and was the word usually used by the Affghans, when speaking of and to our seapoys.

P. 558. Kís, generally signifies bad abusive language.

P. 560. Grut, is the short span, (distance between thumb and forefinger expanded) or the extended skin between the thumb and forefinger.

P. 562. Gandhír, (like the Persian zahr i mâr) is generally used for poison in cursing. e. g. "Zahr gandhír Shah !" May you be poisoned !

P. Do. Gañal, is to count : in H. gínvá.

P. 566. Larmún, signifies the entrails generally, and is applied to the heart, liver, lights, &c.

P. 568. Lúmah, is a snare, or gin ; and never a net which is called jál.

P. 569. Sweshal, is v. a. to milk (cow, &c.).

- P. Do. Lík, generally means, a line or trace.
- P. 570. Lewah, generally signifies a wolf, as log is not much used.
- P. Do. Má-Khám, as is proved by the word Nimá-Khám, P. 599, is a corr. of Nimáz i Shám, the (time of evening prayer). This is a common way of mutilating words among the Affghans, e. g. they call the month Muharram, San-o-Sen (i. e. Hasan and Husain), cutting off the first syllables of both words.
- P. 577. Mreyay, is a slave; a servant would be naukár or saráy.
- P. Do. Marwálay, literary means dying.
- P. 578. Marwand, is the wrist.
- P. 579. Mashr, is "elder," opposed to kishar; in P. mih and kih.
- P. 584. Mlást, is S. S. as P. khwabidah, and means either asleep, or lying down.
- P. 585. Malkhúzah, is not thyme but fenugreek, called in S. and H. methí.
- P. 586. Maḍánú, is a churning staff.
- P. 587. Mangwal, is synonymous with the P. panjah, and means the hand with fingers extended.
- P. 588. Músídal, generally signifies to smile.
- P. 589. Mogay, is S. S. with the P. míkh, and generally signifies a peg, tent-peg, &c.
- P. 590. The word spelt mahí, black pulse, is generally written by the Affghans ميه mayeh.
- P. Do. Myásht, is a month as well as the moon. Sometimes in the former sense it is called myáshtah.
- P. 593. Nárah, is probably a corruption of the A. نعره nārah, a cry.
- P. 593. Náraghí, I believe to be an error for ná-rogh-í, unhealthiness, sickness.
- P. Do. Nátár, is generally used to signify unkindness, harsh and cruel actions, &c.
- P. 595. Nakhtar, is by no means the poplar tree or synonymous with چنار . It is the Pinus Neoza, and bears the nut used in sweet meats, and called cheighúzah.
- P. 598. Naghray, is a kind of fire place or pot-stand, called in H. chúlhá, and in Persian dígdán.
- P. Do. Nghwagal, in the E. and ng/wazhal, in the W. dialect signifies to listen, give ear; from ghwazh, an ear.

P. 599. Nar, is generally used for nal, a pipe.

P. Do. Namást, I believe to be an error for nástah.

P. 600. Nmasay, is generally nwasay, a grandson or daughter, from the old Persian nawásah.

P. 601. Nwaraz, is not a sandpiper, but signifies with karak, a quail.

P. Do. Núkarah, generally signifies clawing, scratching.

P. 602. Nihálah, more generally nálay, is a coverlet to a bed, a quilt. In H. niháli nihálchah.

P. Do. Níyá and níkah, grand-mother and grand-father, are derived from the old P. nayá.

In Pushtú the names of relations are not nearly so numerous and well defined as in the Indian languages.

P. 604. Wádah, is probably a corruption from the A. *وعد* wā-dah and in original signification is restricted to the nuptial contract.

P. 606. War, is the general name of a door; durwázah, is a large door, a gate.

P. Do. Wrá, is the female part of the bridal procession. The male is called janj *وعد*; in H. barát.

P. 608. Wasikah, is never now used to signify "now." Is it not a mistake for os-kih, now, that, &c.

P. 611. Werah, generally signifies the court-yard of a house.

P. 616. Yaredal, signifies to fear.

In the "additions and corrections," there is only one remark to make, viz. that the Pushtú bíchauṇah is directly derived from the H. bich-hauná. S. M. bedding, and certainly does not require us to go so far as to deduce it from pech and orhná.

In conclusion, I have only to say that it is with much diffidence that I venture to offer the above observations upon the work of so learned an orientalist as Dr. Dorn. They are put forward with the sole view of promoting our common study, not with the intention of criticizing the labors of an author, to whom every Pushtú Scholar must feel himself deeply indebted.

I subjoin a short list of words, (many of them of Sanscrit derivation,) common to the Pustú, Panjábí and Sindhí dialects.

<i>Pushtu.</i>	<i>Sindhí.</i>	<i>Panjábí.</i>	<i>English.</i>
Aredal	Aranu	Araná.	To stop.
Báhú	Bánhí	Bánhí.	A bracelet.

Baledal	Baranu	Balaná.	To burn.
Botay	Boto	Botá.	A young camel.
Bíya	Bíyo	Biyá.	Second, again.
Búkah	Boko	Boká.	A bucket.
Chelay	Chhelo	Chhelá.	A kid.
Ghenday	Gandí	Ghundí.	A prostitute.
Gad	Gadu	Gad.	Mixed.
Kúhí	Khúh	Khúh.	A well, pit.
Larah	Lai	Leí.	Because, of.
Manj	Manjhi	Manjh.	In.
Mandánú	Mandhání	Madhání.	Churning staff.
Newal	Niyanu	Newná.	To take.
Ojhray	Ojhri	Ojhri.	Entrail.
Pat	Patu	Pat.	Shame.
Sandah	Sánu	Sánd or Sánh.	Male-buffaloe.
Sár	Sári	Sár.	Information.
Thúhar	Thúharu	Thúhar.	Euphorbia plant.
Tarkán	Drakhanu	Takhán.	A carpenter.
Wesáh	Wesáhu	Wesáh.	Confidence.
Wenú	Wenu	Wená.	Speech, reproach.
Wayí	Wái	————	Language.

The number of words common to Pushtú and Hindostání is accounted for by the circumstance of their being, usually, of Sanscrit origin. The old forms and corruptions of the Persian dialect abound; the following are a few of the most remarkable:—

<i>Pushtú.</i>	<i>Persian.</i>	<i>English.</i>
'Uránawal	fr. Wayrán	To lay waste.
'Inza	.. Anjír	A fig.
Bzah	.. Buz	A she goat.
Púkh	.. Pukhtah	Ripe, cooked.
Pkhah	.. Pay	Foot.
Plan	.. Pahan	Broad.
Táwawwal	.. Táftan	To twist.
Tizh	.. Tishnah	Thirsty.
Tandar	.. Tundar	Thunder.
Tálah	.. Chál	A bird's nest.
Sásidal	.. Chakídan	To drop.

<i>Khiñhtah</i>	fr. Khishit.	A tile.
<i>Khsar</i>	.. Khusar.	A father-in-law
<i>Khúr</i>	.. Kh'áhir.	Sister.
<i>Rasídal</i>	.. Rasídan.	To arrive.
<i>Zgharah</i>	.. Zirah.	Mail-coat.
<i>Zmakah</i>	.. Zamín.	The earth.
<i>Zimay</i>	.. Zam.	The winter.
<i>Zezhdal</i>	.. Záídan.	To be born.
<i>Stor</i>	.. Sitárah.	A star.
<i>Súray</i>	.. Súrákh.	A hole.
<i>Shpún</i>	.. Shapán.	A shepherd.
<i>Ghur</i>	.. Gaz.	The tamarisk tree.
<i>Ghwakhay</i>	.. Gosht.	Meat.
<i>Ghwag.</i>	.. Gosh.	Ear.
<i>Gabínah</i>	.. Angubín.	Honey.
<i>Lastonay</i>	.. Astín.	A sleeve.
<i>Marj</i>	.. Marz.	Land.
<i>Milmah</i>	.. Mihmán.	A guest.
<i>Nást</i>	.. Nishast.	Sitting.
<i>Nakhah</i>	.. Nishánah.	A mark.
<i>Wraz</i>	.. Roz.	Day.
<i>Hagay</i>	.. Khág.	An egg.

On a future occasion I propose to make some remarks upon the remains of the Sanscrit and Arabic languages which are to be found in Pushtú.

ART. VI.—*Indication of a new Genus of Plants of the Order Anacardiæ*, by N. A. Dalzell, Esq. [With two Plates.]
Communicated by the Secretary.

Genus, GLYCYCARPUS (*mihi*).

GENERIC CHARACTER.—Flores dioici- ♂. Calyx 4-partitus æqualis, persistens, laciniis ovatis obtusis. Corollæ petala 4, sub disco hypogyno 4-crenato inserta, oblongo-linearia, æstivatione imbricata.

Stamina 4, sub disci margine inserta, cum petalis alterna, iisque breviora. Filamenta libera, antheræ introrsæ, biloculares, longitudinaliter dehiscentes.

In floribus masculis, ovarii rudimentum nullum; ovarium unicum liberum, sessile, uniloculare, ovulum unicum, funiculo e basi adscendente, pendulum. Drupa transversè oblonga, apice umbone parvo donata. Funiculus demùm testæ adnatus. Putamen nullum, testa membranacea.

Floribus axillaribus interruptè glomerato-spicatis, minutis, bracteatis, albidis.

Sp. 1. *GLYCYCARPUS edulis*. (N. A. D.) Arbor Indica, foliis simplicibus alternis, breve petiolatis glabris, erga apicem ramulorum confertis, elliptico-oblongis, acuminate in petiolum attenuatis.

Observations.—Male specimens of this tree were brought down from Mahableshwur in February last, and I had the good fortune to receive female specimens in fruit from the Goa jungles in May.

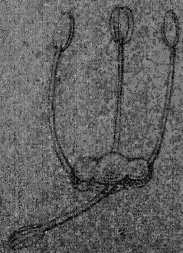
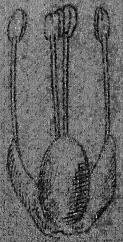
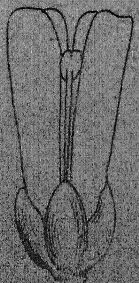
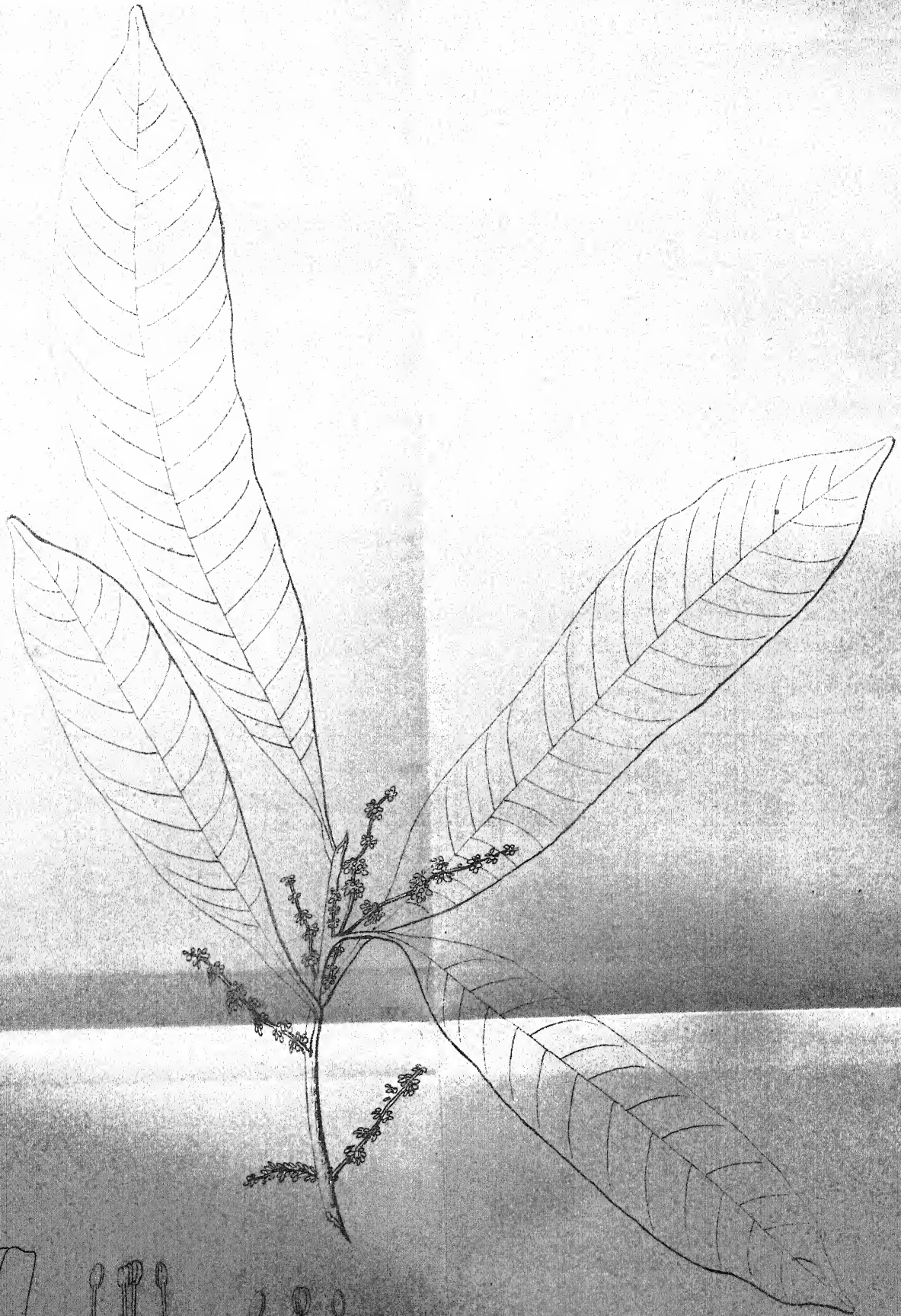
This can scarcely be confounded with any genus already established. Its simple leaves and uniformly dioecious character together with the quaternary disposition of its parts, its strictly spicate inflorescence, and wholly superior fruits, separate it from existing genera. Its nearest affinities seem to be with the genus *Comocladia* of P. Brown, and with the *Botryceras* of Willdenow. From the former it is distinguished by its simple leaves and the form of its inflorescence, and from the latter by the absence of putamen to the fruit.

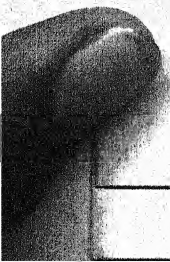
The flowers, which are minute, are arranged in small sessile opposite bundles along a slender axillary rachis, which is covered with ferruginous tomentum. Several spikes generally proceed from the same axil, and are shorter than the leaf.

The female spikes scarcely exceed half an inch in length.

The fruit is a black shining drupe about the size of a French bean; immediately below the outer coat, there is a thin, very sweet oily pulp, beneath which is the testa which is thin and membranous. On one side of the testa extending from the base to the apex, there is a deep groove parallel with the commissure of the cotyledons in which lies the funiculus by which the seed is suspended.

The cotyledons are very thick, transverse and plano-convex, and are penetrated with innumerable pores containing a milky fluid.





In a family like the Anacardiæ, where the fruits are generally distinguished for properties of a peculiarly acrid and dangerous character, it is remarkable to find that the fruit of the tree under consideration is not only of a harmless nature, but possesses such sweet and agreeable, qualities as to cause it to be much sought after, as I find is the case in the Goa districts, where this tree appears to be more plentiful than elsewhere, and where it bears the name of *Ansalé*.

I have here and there observed upon the specimens sent me, small particles of a concrete resinous-looking substance, but it will require a more perfect acquaintance with the plant before it can be determined whether this secretion is in sufficient quantity to be an object of interest in an economical point of view.

The female flower has not yet been seen.

EXPLANATION OF THE PLATES.

Pl. V. *GLYCYCARPUS edulis*, male branch—natural size.

1. Male flower (magnified).
2. Do. do. petals removed.
3. Do. do. petals removed to shew the disk and position of the stamens.

Pl. VI. *GLYCYCARPUS edulis*, female branch with fruits.

1. A ripe drupe.
2. Pericarp removed to shew the testa and funiculus.
3. Testa removed to shew the cotyledons and the position of the radicle and plumule

ART. VII.—*Observations on the Grammatical Structure of the Vernacular Languages of India.* By the Rev. Dr. Stevenson.

No. I.

The assertion that no language can be thoroughly understood till it has been compared with others belonging to the same family, is no where more true than in relation to the Vernacular Languages of India.

From the roots of the Himalayas to the southernmost point of Ceylon, and from the India Caucasus to the confines of Assam, we have a number of languages and dialects more or less allied to one another, mostly composed of two grand elements. To the North of the river Krishná, generally speaking, one of these elements prevails, and to the

South of that river the other is the predominating principle. In relation to this subject the following facts have been established by learned Orientalists.

1. That the languages spoken to the North of the Krishná have all a strong family resemblance, and all draw largely from the Sanscrit, which is the prevailing element in their composition.

2. That the languages to the South of the Krishná also have all a strong family likeness, while the prevailing ingredient in their structure is not Sanscrit.

3. That for the expression of ideas connected with religion, law, the sciences, and the arts of civilized life, the Southern family as well as the Northern draws almost exclusively from the Sanscrit.

4. That Mohammedan rule and Musulman intercourse have introduced into all of these languages a greater or less proportion of Arabic and Persian words, which are carefully to be distinguished from the original words of the Indian tongues.

5. It is usually taken also for granted that between the non-Sanscrit parts of the Northern and Southern families of languages, there is no bond of union, and that the only connecting link between the two is their Sanscrit element. It is to this last proportion that the writer of this paper demurs. Were it once established, it would follow that all the unity of the Indian nations arises from Brahmanical institutions, language, and literature, and that among the other tribes not of Brahmanical descent, there is no bond of connection whatever. At such a conclusion any one, who takes all his facts from Brahmans, and whose chief intercourse with the natives consists in conversing in his study with a Pandit, may very easily arrive, but no one who has mingled with the people, studied their modes of thinking, observed their rites of worship, manners and external form, all so diverse from any thing truly Brahmanical, will be so led astray. The real truth is, that judging from their own standard religious works, the Brahmans have changed as much fully as the people, and have had their religion and customs more modified by those of the aboriginal inhabitants of India, than either they themselves generally, or others are aware of; and still a wide line of demarcation remains, marking them as distinct from the rest of the population. But after all, the grand proof of an original connection among the Hindu tribes is unity of language. The vocables of the northern family, it is true, are almost wholly Sanscrit; Mr. Colebrooke, a good judge

on this subject, considers seven-eighths of the Hindi as derived originally from the Brahmanical tongue; and this may not be a proportion far from the truth in regard to the great majority of the other dialects of Northern India. No one, however, who has studied the Hindi and the Sanscrit, can have failed to remark that with the vocables the similarity of the languages disappears. Greek or Latin, or even German, Grammar bears much more resemblance to the Sanscrit than the Hindi. The inflections of the Substantive Verb in all of these languages, is much more like that of the Sanscrit, than those of the Hindi Substantive Verb, or those of any of the Vernacular languages of India.

The present Indicative of the Verb to be, in five of the language referred to, is—

		Sing.			Plu.	
Sanscrit	Asmi,	asi,	asti ;	asmas,	stha,	sunti.
Latin	Sum,	es,	est ;	sumus,	estis,	sunt.
German	bin,	bist,	ist ;	sind,	seid,	sind.
Hindi	hûn,	hai,	hai ;	haiṇ,	ho,	haiṇ.
Marathi	A'hen,	âhes,	ahe ;	ahon,	aha,	ahet.

Whence has this remarkable difference in grammatical structure arisen, if all of these languages are nothing more, as the Brabmans teach, than corruptions of the Sanscrit? The theory which has suggested itself to the writer as the most probable is, that on the entrance of the tribes which now form the highest castes, those of the Brahmins, Kshatriyas, and Waisyas, into India, they found a rude aboriginal population, speaking a different language, having a different religion, and different customs and manners; that by arms and policy the aboriginal inhabitants were all subdued, and in great numbers expelled from the Northern regions, those that remained mixing with the new population, and being first their slaves, and then forming the Sudra caste. The language of these aborigines is supposed to have belonged to the Southern family of languages, the most

perfect remaining type of which family is the Tamil. By means of a Comparative Vocabulary of the different Indian tongues, on which the writer is engaged, and by attention to their grammatical structure it is hoped some light may be thrown upon these interesting subjects, and data furnished for arriving at some more accurate determination of the questions they suggest than has hitherto been possible, thus proving the truth or falsehood of the theory above propounded, which if it fall to the ground before investigation its propounder will be satisfied.

In reference to the letters of the Indian tongue, two subjects require some remarks; the one, the characters by which the sounds are expressed and the other the sounds themselves.

In the Sanscrit there are exactly fifty simple letters, each of which has a distinct and separate sound. This sum includes ञ, a letter which is not used except in the Vedas. Of these, seven letters are not sounded in Hindi, and six in Marathi, Canarese, &c. at least by the common people. These letters are ऋ, ॠ, ॡ, ॢ, ॣ, ।, ॥. The sounds expressed by these letters, then are purely Brahmanical, being no where enunciated by the population generally, but changed to रि, री, लि, ली, अ, and ख or some of the other letters or syllables. In the Tamil, these and all the aspirates are omitted or changed, as also is the ञ which even in Hindi is scarcely distinguishable from the स, although the Marathi Brahmins sound it as a soft *sh*. In the Marathi, Canarese, and Telinga, there are four sounds, which do not belong to the Sanscrit language; ts, tsh, dz, and dzh, in which way च, छ, ज, and झ are frequently pronounced. In the Tamil, there is a peculiar *l* and a peculiar *n* coming nearer the English *n* than either of the two used in Sanscrit, and there is also harsh *r*, which it has in common with all the Southern family. The elements then of the Sanscrit language are different from those of the Vernacular tongues, none of them having several of the sounds employed in the Brahmanical tongue, and those to the South having sounds, which do not occur in Sanscrit. Besides, the Sanscrit abounds in combinations of letters without the intervention of consonants, this is a thing wholly abhorrent to the genius of all the vernacular tongues; one of these consonants in such a case is either wholly omitted by the common people, or a vowel is interposed between them. Thus धर्म (Dharma) becomes धम्म (Dhamma) or धरम (Dharam); अष्ट (Ashta) becomes आठ (A'th), lengthening the first syllable to compensate for the consonant dropped, a process which also takes place in changing कर्म (Karma) to काम (Kām)

&c. In Sanscrit also the final vowel is pronounced, while in the vernaculars it is dropped. While then the Sanscrit alphabet is perfect for the expression of the sounds of the language to which it was originally adapted, it fails as soon as it is applied to the vernacular tongues, possessing redundant letters, and failing to express the peculiar sounds of those languages. Nevertheless, all the alphabets of India as well as those of Ceylon and Tibet, seem evidently derived from one source, the ancient *cave* character, still found engraven on the rocks in many parts of the country: This character itself is intimately connected with the old Phœnician, and indeed seems to have been derived from that source. The annexed comparison of some of the *cave* letters with others in the old Samaritan, and Phœnician, will exhibit coincidences, which could hardly have been the result of accident. Indeed, it would seem that all the Alphabets in existence may be traced either to this source, to the Egyptian Enchorial, derived from their hieroglyphic system, or to the Arrow headed character. As far as yet ascertained, these seem to have had an independent existence, and all the rest to have been derived from them. Writing in the most ancient times, seems every where to have been hieroglyphical; that is, a mere rude painting of the object intended, or a symbol pointing it out by some obvious analogy. The thought seems then to have been suggested that these symbols should be made the signs of sounds, and not of objects and ideas. Though thus the manual labour of writing was increased, the acquisition of the art was rendered easy, and the expression of ideas made more certain and definite. The Chinese are the only civilized people, who retain the ancient system of writing by the use of symbols for objects and ideas, instead of sounds; and even they in the expression of foreign proper names have been obliged to admit a modification of their system, essentially alphabetical. There is no evidence, however, that the Hindus had ever any system of writing except the Alphabetical. This must have been in use at or soon after the rise of Buddhism, that is, five centuries before our era, and before any direct intercourse had been established with the Greeks or Western Asiatics. But the monuments of Buddhism in Afghanistan, shew that the religious systems of India came into close contact with the empire of Persia, and the ancient histories speak of Persian conquests in the North-West of India. What was known in Persia then must have been known in India; some parts of the Vedas, from internal evidence, must have been composed twelve or fifteen cen-

turies before the Christian era, and yet they might, like the poems of Homer, have been handed down from father to son without being for several centuries committed to writing. Still, unless alphabetical writing had been known in India before the time of Darius Hystaspes, the Arrow headed character, which was then in vogue in Persia, would most probably have influenced the Hindu system, and we should not have been able to trace so many analogies with the Alphabetical system of Western Asia, as will be found in the annexed Table, while the Indian characters have no resemblance to the Arrow headed.

Comparison of the Cave Character and the old Phœnician of the Inscriptions.

Roman.	Old Phœnician.	Cave Characters.
A	𐤀	𐤀
B	𐤁	𐤁
G	𐤂	𐤂
D	𐤃	𐤃 ^{dh.}
U	𐤄	𐤄
I or Y	𐤅	𐤅
L	𐤆	𐤆
TS	𐤇	𐤇 ^{sh.}
SH	𐤈	𐤈
T	𐤉	𐤉


Samaritan

N. B. As the Phœnicians wrote from right to left, and the Cave Character is written from left to right, some of the letters must be turned round to observe their similarity with those of a different class. Other examples might have been added, though these are the most striking.

ART. VIII.—*On the site of the Temple of Neptune at Alexandria mentioned by Strabo; by Captain Newbold. (Communicated by the Secretary.)*

In breaking up and excavating the ruins of ancient Alexandria for stone for the new fortifications of the modern city, the Pasha's workmen have laid bare the remains of a handsome temple which has for centuries past been concealed under a heap of debris, sand, fragments of brick, pottery, marble, porphyry and limestone, to the depth of nearly 30 feet below the surface. These ruins lie on the eastern side of Alexandria, outside its present walls, about 235 yards from the sea-shore, and about the same distance from the Lazaretto from which they bear S. 24.° W. From Pharillon point they bear S. 13.° E. about $\frac{1}{2}$ mile distant, and from Castle or Pharos point E. 34.° S.

From the discovery of a statue of Horus near this spot, these foundations have been supposed to be the remains of a temple dedicated to this divinity of the ancient Egyptians, but, from the fragments of its architectural embellishments I am of opinion that the temple was a Grecian structure, a supposition which appears strengthened by the discovery on the spot of the following imperfect inscription in Greek (probably a dedication to Ptolemy Philadelphus) on a piece of dark hornblendic granite, apparently the fragment of a pedestal, which once supported a column or statue to this monarch.

 ΦΙΛΑΔΕΛΦΟΝ
 ΟΕΙΣΤΩΡ ΣΑΤΥΡΟΥ ΑΛΕΞΑΝΔΡΕΥΣ *

The word preceding Philadelphon has been carefully and designedly erased from the block by the chisel, a remarkable circumstance. It was probably Πτολεμαϊον.

The ancient forms of the letters Ε, Σ, Ω, appear in this inscription, as in the medals of the Ptolemies, though the more modern forms Ε, C, Ω, are seen in the celebrated inscription, on a golden plate given by Mahomed Ali to Sir Sidney Smith, purporting to be the dedication or erection of a

* The inscriptions in the MS. are stated by the author to be fac-similes, but for want of Greek capitals, Roman type modified has here been more or less substituted for them. Ed.

temple to Osiris by Ptolemy Euergetes son of Ptolemy Philadelphus.*

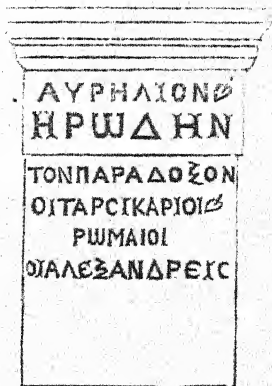
At the N. E. angle of the peristyle, the workmen have turned up the mutilated *torso* of a horse well executed in white marble. The head and shoulders are gone, as well as the hind legs above the hocks. The animal was originally sculptured in a rearing posture, resting on his hind legs, which appear to have been doubled under him in the attitude of springing from the ground, the fore feet pawing the air. The artist has ingeniously relieved the hind legs from the weight of the upper portions of the statue, by a marble prop, elegantly carved in the shape of the trunk of a tree, reaching from the ground to the central part of the left side of the belly of the animal, and cut out of the same block. The root of the tree rested, apparently, on a pedestal, from which to the horse's belly it measures 4 feet. The dimensions of the statue may be calculated from the following measurements.

Circumference of thigh close to body	4 feet 9 inches.
.. Do..... Do. near hock	2 — 1
.. Do. body of horse, nearly $\frac{1}{3}$ d broken away	7 — 10
Length of <i>torso</i> from rump to nearly middle	
of body	4 — $6\frac{1}{2}$

* The following inscription, which I copied (in 1845) from a marble pedestal in one of the by streets of Alexandria, will afford an idea of the more modern forms of the Σ , and Ξ . The pedestal appears to have supported a statue or pillar dedicated by the Tarsikarioi and citizens of Alexandria to Aurelian Herod, who is here styled "*τον παραδοξον*" the wonderful. The same forms of these letters are preserved in another inscription, on a broken granite pedestal lying near the house of the Greek Consul in the great square of Alexandria and which bears the name of the Emperor Severus—

ΑΥΤΟΚΡΑΤΟΡΟΣ ΚΑΙΣΑΡΟΣ
ΛΟΥΚΙΟΥ ΣΕΠΤΙΜΙΟΥ ΚΗΥΗ
ΡΟΥ, and of the then Eparch of Egypt, M. Anten-

nus Sabinus. The forms Ξ , Σ , Ψ , have been thought to commence at a period not long antecedent to that of the empire, but the researches of modern writers have shown that they are of more ancient date, but rarely used in Egypt, at least except in a running hand. The first medals on which they occur are those of Cleopatra and Antony, struck between the years 37 and 31. B. C., and in an inscription about 76 B. C.



The tail is gone, it appears from the cavity left behind to have been executed from a separate piece of marble, and to have been attached to the *torso* by an iron pin, part of which is still remaining. From the position near the entrance of the temple, where this statute was originally found, it probably ornamented the portico. On the trunk of the tree supporting it, is a Greek inscription, to the effect that, a certain Antiochus, and Demetrius of Rhodes, son of Demetrius, sculptured this statue in honor of the gods. The following is a copy of the inscription—

ΘΕΩΝ ΑΝΤΙΟΧΕΥΣ ΚΑΙ
ΔΗΜΗΤΡΙΟΣ ΔΗΜΗΤΡΙΟΥ
ΡΟΔΙΟΣ ΕΠΟΙΗΣΑΝ.

Ten paces westerly from the place where the statue now lies, is a round marble pedestal, which once probably supported a statue to the Archon Tiberius Claudius Demetrius, who was made *Εξήγητης* in the year, Γ of the reign of Adrian. The following is a copy of this inscription—

ΤΙΒΕΡΙΟΝ ΚΛΑΥΔΙΟΝ ΔΗΜΗΤΡΙΟΝ ΓΕΝΟΜΕ
ΝΟΝ ΕΞΗΓΗΤΗΝ ΤΩ Γ' ΕΤΕΙ ΑΔΡΙΑΝΟΥ ΚΑΙ ΣΑΡΟΣ
ΤΟΥ ΚΥΡΙΟΥ ΚΑΙ ΤΩ ΕΞΗΣ ΔΕ ΤΕΙ ΥΠΟ ΜΗΜΑΤΟΡΑ Φ
ΟΝ
ΠΡΩΤΟΝ ΑΡΧΟΝ ΤΩΝ ΧΕΙΡΟΤΟΝΗΘΕΝ ΤΑ ΑΡΧΗΝ ΕΠ
ΑΡΧΗ,

The term *Εξήγητης* applied to Tiberius, literally signifies a conductor or interpreter of religious rites. At Athens the *Εξήγηται* were three in number, appointed by the state to explain to strangers the religious rites. In Egypt, it was the title of a certain magistrate, who probably was vested with both civil and religious powers.

The ruins now (1846) present an assemblage of broken granite columns, confusedly scattered over a space enclosed within the foundations of the temple, which can still be traced, though rapidly disappearing under the pickaxes of the Pasha's workmen. The largest pillars near the base are $3\frac{1}{2}$ feet in diameter tapering to 3 feet, and the smaller columns have a diameter of 2 feet 2 inches. The former are of the red

porphyritic granite of Syene, the capitals and pedestals, judging from the few still remaining fragments, were of fine white limestone and marble. One or two pieces exhibit the echinus moulding and modillions of the Corinthian order. The echinus and arrow mouldings resemble those used by the Greeks, more than the less elegant forms subsequently adopted in Roman Architecture.

The temple appears to have been a peripteral structure, of the Corinthian order, with some ornaments purely Egyptian, surrounded by a peribolus, portions of which are seen in two adjacent excavations about 50 paces to the N. E. and S. E. of the temple. The temple itself, exclusive of the peristyle, is about 120 feet long, by 60 broad, running nearly east and west, and facing towards the east. From many fragments of granite pillars discovered in an excavation about 60 paces from the eastern extremity, I think it probable that a colonnade formed the approach to the entrance, instead of avenues of sphinxes, &c. which lead up to the *propyla* of temples purely Egyptian. The *Naos* has disappeared, except a massive portion of its wall near the N. E. angle, which is also fast vanishing under the hands of the Egyptian workmen. The walls and foundations are composed of well squared and highly finished blocks of compact white and sometimes nummulitic limestone, (of middle Egypt) as also the pavement which still remains almost untouched (1846). Some of the blocks of limestone in the peribolus are 6 feet long, 3 feet thick, and 3 feet broad, smoothly cut, and laid without mortar. On the S. E. side of the temple are several sepulchral vaults, coated inside with cement, now containing rain-water, brackish by infiltration through the saline sands which cover them; their floor is on a higher level than that of the temple, with which they are unconnected and probably were constructed posterior to its destruction. Within the temple, at its eastern extremity, is a small square cistern, sunk below the pavement to the depth of a few feet, but now nearly filled with sand. Its sides are 16 feet 3 inches square and revetted with a cement composed of lime, powdered brick and small sea-beach pebbles; it has steps on its N. E. angle, and was probably used for purposes of ablution.

Among the rubbish lying on the floor of the temple, consisting of fragments of beautiful marbles, *breccia de verde*, *verd antique*, jasper, basalt and granite, I found a fragment, in hard red jasper, of the leg of a statue, evidently of a man most beautifully sculptured, and decidedly not the

work of an Egyptian chisel. This fragment is still in my possession. In delicacy of proportion and highness of finish, it approaches the Apollo Belvidere. I also found on several fragments of granite the letters IOY inscribed, and in one instance IOYA.

Having now, as I trust, clearly shown that this supposed temple to Horus was not an exclusively Egyptian shrine, as imagined, I shall briefly call the attention of the reader to the fact of its occupying the exact site of the temple to Neptune, as described by Strabo, which has hitherto been undiscovered by antiquarians, and with which I humbly conceive the present ruins to be identical. A glance at any good plan of modern Alexandria, compared with my own remarks on the position of the ruins, and the following description of the temple to Neptune of ancient Alexandria, by Strabo, will be sufficient to place the identity of the sites in the clearest point of view.

"On the right as you sail into the great harbour (of Alexandria) are the island and tower of Pharos; on the left, rocks and the promontory of Lochias, where the palace stands; and as you enter on the left, contiguous to the buildings on the Lochias, are the inner palaces which have various compartments and groves. Below those is a secret and closed port belonging exclusively to the Kings and the isle of Antirhodus, which lies before the artificial port with a palace and a small harbour. It has received this name as if it were a rival of Rhodes. Above this is the Theatre, then the Posidium, a certain cove lying off which is called the Emporium with a temple of Neptune. Antony, having a mole in this part projecting still further on the port, erected a palace which he named Timonium"—"Beyond this are the Cæsareum and Emporium, the recesses and the docks extending to the Heptastadium. All these are in the great harbour."

"On the other side of the Heptastadium of Pharos is the port of Eunostos" (Strabo 8. 24).

Now this graphic description of the Amasian geographer places the temple of Neptune with the Posidium, Emporium, Timonium, and Theatre, near the sea, between the Cæsareum on the west (marked at the present day by Cleopatra's needle) and the palace, the site of which is at present occupied by the Lazaretto, covering the base of the Lochias or Pharillon promontory to the eastward.*

* In the Catacombs to the E. of the temple, I found a *terra cotta* lachrimary of an early

I have carefully examined the whole of the ground between the Cæsa-
reum and the palaces, and can trace all the structures mentioned by Stra-
bo, but could not discover any other remains of the temple to Neptune,
except the ruins just described, and which, as I have before remarked,
occupy the exact site, as described by Strabo, of this temple.

The mutilated *torso* may have been the remains of some sculpture in-
tended to commemorate one of the most celebrated exploits of the Ocean-
God, viz. that of his causing this noble animal, so useful to mankind,
to spring from the earth by a stroke of his trident, when he contended
with Minerva, the honor of giving name to the Grecian capital. The
horse was, therefore, considered among the animals most sacred to Nep-
tune..

Christian epoch, with the inscription ΕΥΛΟΓΙΑ ΤΟΥ ΑΓΙΟΥ ΜΗΝΑΟ
and my friend the Rev. Mr. Winder discovered there, the following funeral inscriptions in
red paint, (now 1846 obliterated), from the first of which it may be inferred that the cus-
tom of praying for the dead and the belief in their power of intercession prevailed in the
Church of Alexandria from the earliest times of Christianity. Hence, perhaps, Clement of
Alexandria so strongly advocated the practice of praying for departed souls.

ΜΝΗ ΘΗΘΕΤΗΣΚΟΙΜΗΣΕΘΣΚΑΙΑ
ΝΑΠΑΥΣΕΟΣΤΟΥ ΔΟΥΛΟΥ ΣΟΥ ΣΑΚΤΟΥ ΜΕ
ΓΑΛΟΥ ΚΑΙ ΑΣΥΝΚΡΙΤΙΟΥ ΚΑΙ ΣΟΦΙΑ
ΚΑΙΤΙΜΟΘΕΟΥΚΑΙΦΙΛΑΔΕΛΦΟΥ
ΤΗΣΚΑΛΗΣ ΕΥΡΕΤΗΣ ΠΑΝΤΕΣ ΕΦ
ΞΑΘΑΙ ΥΠΕΡ ΑΥΤΩΝ ΙΝΑ ΚΑΙ ΑΥ
ΤΟΙ ΥΠΕΡ ΗΩΜΝ.

ΜΝΗΣΘΗΤΙΚΕΤΗΣΚΥΜΗΣΕΩΣΚΕΑΝΑΠΑΥΣΕΟΣ
ΗΣ ΚΑ
ΛΟΚΟΙΜΗΤΟΥΤΗΣ ΔΟΥΛΗΣ ΣΟΥ ΣΟΗΣ ΕΚΥΜΗΘΗΜ
ΙΝΙΧΟΙΑΚΙΓ

ΜΝΗΣΘΗΤΙΚΕΤΗΣΚΥΜΗΣΕΩΣ ΚΑΙ ΑΝΑΠΑΥΣΕΟΣ
ΤΟΥΚΑΛΟΚΟΙΜΗ
ΤΟΥ ΤΟΥ ΔΟΥΛΟΥ ΣΟΥ ΝΑ ΥΛΣΙΟΙ ΕΚΥΜΗΘΗΜ
ΗΝΙ ΧΟΙΑΚαι

The circumstance of a statue of Horus being found among the rubbish in the vicinity of the temple by no means warrants the inference that this structure was dedicated to that god. Supposing even that the statue was once honoured by a niche in the temple, it was not uncommon to see both Egyptian and Grecian divinities in Egypt occupying the same shrine. The temple at the porphyry quarries of Gebel Dukhan, bears an inscription dedicating the edifice to Pluto, the Sun, the great Sarapis, and the gods worshipped in the same *Naos*.

ΔΙΙ. ΗΑΙΩΙ. ΜΕΓΑΛΩΙ. ΣΑΡΑΠΙΔΙ. ΚΑΙΤΟΙΣΣΥΝΝ
ΑΟΙΣ ΘΕΟΙΣ.

The temple at Sakeyt near the emerald mines of Zubará, is dedicated to Isis, Apollo, and the gods worshipped in the same *Naos*—καὶ τοῖς συνναοῖς θεοῖς. The Ptolemies, the Greeks, and Romans, from both superstitious and political motives, did not exclude the gods of conquered nations from their pantheon; and we find that the worship of Sarápis was introduced by Antoninus Pius into Rome itself A. D. 146, but the licentiousness attending the celebration of the Sarapidan mysteries speedily caused its abolition by the Roman senate. Isis and Anubis were also worshipped in Rome. Horus is the prototype of the Grecian Apollo, and in fact the whole Grecian pantheon may be traced to the banks of the Nile.

The mysterious Sphinx itself, representing the Zodiacal signs, Leo and Virgo, had, doubtless, some mythic reference to the worship of the sun, and its influence over the sources of Egypt's wondrous fertility and early civilization, viz. the periodical inundations of the Nile, which are usually at their height during the passage of the great luminary through these constellations. It is a great and almost a literal truth that from the mud of this extraordinary river, sprang the great tree of knowledge, whose shoots, transplanted in the genial soils of Greece and Rome, have since spread over Europe, and over a large portion of the new world, bringing forth abundant fruits, which, under the benign influence of Christianity, like the peaceful olive of Minerva, have ripened into blessings far more useful to mankind than the horse,—the earth-sprung gift of Neptune.

ART. IX.—*A Grammar of the Játakí or Belochkí Dialect*
By Lieut. Burton, Assistant, Sindh Survey. (Communicated by the Secretary).

PREFACE.

The rough and uncultivated dialect which is the subject of the following pages, is a corrupted form of the Multání, itself a corruption of the Panjábí tongue. The latter language is spoken in all its purity about Lahore itself. In the country parts, the people use what is called the Tathki dialect * which in the north and west of the Panjáb abounds in words borrowed from Pushtú and the Dográ clan. Towards the south again, Panjábí somewhat deteriorates; at Multán and in the districts of Thang-Siyál, local words and idioms creep in, and so numerous are the varieties of speech there, that almost every day's march will introduce the traveller to some words before unknown to him. The want of any standard of language and the difficulty of communication and intercourse between the several towns and villages, tend greatly to increase this useless luxuriance of speech. † At Bhawalpore and Subzulcote, nearly half the words are Sindhí, and the pronunciation approaches closely to the difficult and complicated system of the latter tongue.

The corrupted dialect of Panjábí used in Sindh, is known to the people by three names—

1. Siráikí.
2. Belochkí.
3. Játakí.

It is called Siráikí from Siro (upper Sindh), where it is commonly spoken by the people. As many of the Beloch clans settled in the plains use this dialect, the Sindhís designate it by the name of Belochkí. It is a curious fact that although the Beloch race invariably asserts Halab (Alep-

* Probably the ancient Prakrit language of the country. The Author of the "Dābis-tān" applies the name "Jat tongue" to the dialect in which Nānak Shāh composed his works, and remarks that he did not write in Sanscrit. In the Panjáb *Játakí bát* is synonymous with *Ganvār kī bolī* in Hindostan.

† A glance at the pronouns and the auxiliary verb will, I believe, bear me out in my assertion.

po) to have been the place of its origin, yet the only two languages in use, present not a single Arabic phrase or idiom. The tongue spoken by these hill-people, is an old and obsolete dialect of Persian, mixed up with a few words of barbarous origin. The Belochs of the plains generally use the corrupt dialect of Panjābī called after their name, particularly the Nizāmānī and Lāshārī' clans. The Donukī', Magasī', Bhurplat and Kalphar tribes usually speak the hill-language, and the Rind, Tālpur, * Marī (Murree), Chāndiyā, Jemālī and Laghārī clans use both.

The name *Jātakī* † as applied to this dialect, is of Panjābī origin, and refers to the Jats, the aboriginal inhabitants of the country. Under that name however, we find four great tribes included.

1st. The Panjābī Jat, who is neither a Moslem nor a Hindoo properly speaking. He is supposed to be a descendant of a very ancient race, the Goths. In Indian History they first appear as wandering tribes alternately cultivators, shepherds, and robbers. Many of them became Sikhs and did great benefit to that faith, by fighting most zealously against Moslem bigotry. As this was their sole occupation for many years, they gradually became more and more warlike, and at one time were one of the most fighting castes in India.

2d. The "Jat," of the Hazārah country, Jhang-siyāl, Kutch Gandāwa and Sindh generally.—He is always a Moslem, and is supposed to have emigrated from the north during or shortly before the Kalhorā reign. In those days the Belochs were all but unknown in Sindh, and the Aristocracy of the country, the Ameers, Jāgirdars, and opulent Zemindars, were all either Sindhis or Jats. About Peshāwar the word "Jat" is synonymous with "Zemindār," and as in Sindhi, ‡ occasionally used in a reproachful sense.

3rd. A clan of Belochis. This name is spelt with the Arabic J. In Sindh they inhabit the Province of Jati, and other parts to the S. E. The head of the tribe is called Malik, e. g. "Malik, Ham al Jat."

* The Tālpūr Ameers all used this language when conversing with their families, not Sindhi nor Persian.

† It is what the Arabs call an *ism i nisbat* or derivative noun, formed from the proper name "*Jat*."

‡ In Sindhi the word "*Jātu*" means a breeder of Camels, or a Camel driver. It is also the name of a Beloch tribe. The word "*Jyātu*" (with the peculiar Sindhi J and T has 3 meanings,—1st the name of a people (the Jats); 2d a Sindhi as opposed to a Beloch; 3d an abusive word, used as "*Jangali*" is applied in W. India to Europeans, so "*do-dasto. Jyātu*" means "an utter savage."

4th. A wandering tribe; many of whom are partially settled at Candahár, Herat, Meshed, and other cities in central Asia. They are notorious for thieving, and considered particularly low in the scale of creation. They are to be met with in Mekran, Eastern Persia, and occasionally travel as far as Muscat, Sindh, and even central India. I have never been able to find any good account of the origin of this tribe.

Reckoning the population of Sindh to be about a million, one fourth of that number would speak the *Játakí* dialect, as many of the wild tribes to the N. and on the E. frontier, and even the Hindús in the N. of Sindh use the language. It contains no original literature, except a few poems and translations of short tracts on religious subjects. The following is a list of the best known works :

1. A translation of the "*Diwán i Háfiz*" into *Játakí* verse. There are several different versions; the best is one lately composed by a Multání.

2. "*Yúsuf Tulaykhá*," a fertile subject among Moslem people; there are three or four different poems called by this name.

3. "*Hír Ránjhá*," a Panjábí tale well known in Upper India.

4. "*Sassí and Puornún*," the Sindhí Story. I have seen it in the Gurumukhí, as well as in the Arabic character.

5. "*Saifal*," or to give the name at full length, the tale of Saif ul Mulúk and the *Perí* (fairy) *Badí ul Jamal*. * It is a very poor translation or rather imitation of the celebrated Arabian or Egyptian story, as it omits all the most imaginative and interesting incidents. The tale however is a celebrated one in the countries about the Indus. Besides the many different versions to be met with in Panjábí, Multání, and *Játakí*, it is found in the *Pushtú*, and I believe in other dialects, as *Brahúí*, &c. In the native Annals of Sindh, as for instance the "*Tohfat ul kirám*," the tale is connected with the history of the country in the following manner—

Alor or Aror, the seat of Government of the *Ráhís* or Hindú rulers of the land, was a large and flourishing city, built upon the banks of the

* See Lane's *Arabian Nights*, Vol. 3 Chap. 24. In the Arabic version of the tale, Egypt is the scene of action, and the hero wanders to China, India, and other remote localities.

river Mehran. * Some time after the partial conquest of Sindh by the Moslems, one Dilu Ráe, an infamous tyrant, was ruler of Alor. For years he had made a practice of seizing the wives and daughters of the traders who passed through his dominions. At length Saif ul Mullick and his fair spouse, together with a company of merchants entered Aror, when Dilu Ráe hearing of the lady's beauty, wished to arrest her husband under pretence that he was a smuggler. The unhappy Saifal promised to give up his wife on his return to Aror, provided he were permitted to pass on towards Multán, and the tyrant granted him his request, feeling the more secure of his victim as in those days the Indus was the only safe line for merchants. Saifal started on his journey, praying to Heaven that his honor might be saved; his supplications were accepted, and the river in one night left Aror, and entered the rocky bed between Sukkur and Roree, through which it now flows. The ruin of the former capital is said to have commenced from that day. The "Tohfát ul kirám" moreover states, that Saifal and his fair spouse, after performing a pilgrimage to Mecca, went and lived in the country between Dera Gházi khán and Si'tpúr. There they died and were buried, together with their two sons, Jah and Chatah, and the tombs are to this day places of pilgrimage. †

6 "Lailí Majnún," a metrical version of the tale of the celebrated Arab lovers. It appears to have been translated or rather adapted from one of the numerous Persian poems upon that fruitful theme of verse, but has little to recommend it either in style or incident.

* "Mehrán," or the central and lower course of the Indus. Sir Alexander Burnes repeatedly states that the term "Mehrán" is a foreign word, not known to the Natives of Sindh. On the contrary most men of any education are acquainted with it, and it occurs in Sindhi as well as in Persian composition. In the celebrated Risálo of Sháh Abdullatíf, we find it repeatedly occurring as "Mauja hane Mehránee," ("Mehran rolls his waves along"). In a Sindhi Persian work called the "Tohfát ul Tahírín," a short account of celebrated Sindhi, Saints, the following passage occurs: "The holy Pír Logo is buried on the banks of the river called by the Sindhis "Mehrán," by the Arabs "Sayhim" and "Jaghim." Pír Logo's tomb is on the banks of the Indus near Tatta.

† The native annalist tells the story with some slight alteration; moreover he appears to be ignorant of its Arabian origin. I give the tale as it is known by tradition among the people of Sindh. An old rhyming prophecy, perpetually quoted by Bards and Minstrels alludes to the future bursting of the dam, which was miraculously formed at Aror in order to divert from it the waters of the Indus.

7 "Mirzá Sáhíbán," a translation into Játakí of the Hindoostani or Panjábí tale.

8. "The loves of Shaykh Ali' a faki'r, and Jeláli the fair daughter of a blacksmith." The scene of the tale is Jhang Siyál, a tract of country celebrated for its fakirs and lovers.

The above list contains the names of the most celebrated romances. They are all metrical, as prose would be very little read. The Moslems have also numerous works on religious subjects chiefly. Some of these, as for instance the "Ahkám us salát", a short treatise on "Akaid" (tenets) and "Ahkám" (practice), are written in verse and committed to memory by women, children, and the *seri studiorum* who find leisure to apply themselves to reading. Moreover each trade, as blacksmiths, carpenters and others, has its own Kasatnáme, or collection of doggerel rhymes, explaining the origin of the craft, the invention of its tools, the patron saint, and other choice *morceaux* of important knowledge, without which no workman would be respected by his fellows. The celebrated Arabic hymn, generally known by the name of "Duá Suryám" * (the Syrian or Syriac prayer), and supposed to be an inspired composition has been translated, and is committed to memory as a talisman against accidents and misfortunes. The only attempt at a Vocabulary that I ever met with is a short work called "Khálik-Bári," from its first line of synonyms "Khálik Bári Sarjanhár." It resembles the Sindhí Duwayo and Trewáyô, and is given to children in order to teach them Arabic and Persian. These short compositions, are common in the languages spoken on the banks of the Indus besides Panjábí and Sindhí, I have met with them in Belochkí, Brahuikí, and Pushtí.

The songs, odes, and other such pieces of miscellaneous poetry, may be classed under the following heads :—

- 1st. The "Rekhtah," as in Hindostání.
- 2nd. The "Ghazal," as in Persian and Hindostání.
- 3d. "Dohrá," or couplets, usually sang to music.
- 4th. "Tappá," or short compositions of three, four or five verses, generally amatory and sung by the Mírásí or minstrels.

* It has been published in Arabic and Pushtu by Dr. Bernhard Dorn in his excellent Chrestomathy. Some authors derive its peculiar name from the circumstance that it is supposed to have been translated from the Syrian by Ali, or as is more generally believed, by Ibn Abbas.

5th. "Bait," an indefinite number of couplets in which very frequently the lines commence with the letters of the alphabet in regular succession. This trick of composition is much admired; probably the more so as it is usually introduced into themes which, to say the least of them, are vigorously erotic. The Natives of Sindh never, I believe, use the *Játakí* dialect for "inshá" or epistolary correspondence; consequently they have not a single work on that subject.

The *Játakí* is usually written in the Nastalík and sometimes in the Naskhí character. In Nastalík, the system of denoting the cerebral letters and others which do not belong to Arabic, is exactly the same as in Urdú. The only exception is that the letter *ج*, which in Hindostání never commences a word, but often does so in Panjábí and *Játakí*, as in the verb *ج* *ریران*, to roll on the ground, to weep. The Naskhí, particularly in Sindh, is often punctuated in the most careless and confused manner, but as the *Játakí* possesses only the same number of letters as the Urdú alphabet, and rarely uses the five * peculiarly Sindhi sounds, the learner will find little difficulty in acquiring a knowledge of the character. The Hindús, generally speaking, use the Gurumukhí, a beautifully simple modification of the Devanagari alphabet, and venerated by the Sikhs, as the holy writing of their spiritual guides. The traders have a great variety of characters. Towards the north the Lande, a kind of running hand formed from the Gurumukhí, is most used; this again towards the south changes its form and name, and is generally called the Ochakí alphabet. † From the above two are derived the multitude of rude and barbarous systems, which are found in Sindh and Cutch.

The following pages were originally prepared for my own use, when studying the Panjábí dialect. Dr. Carey's Grammar I found to be of very little assistance, as it gives few or none of the varieties of formation, and is copious no where except upon the subject of passive and causal verbs. Lt. Leech's work also, as may well be imagined, was found too concise, as the grammatical part does not occupy more than six pages.

* Viz. *B*, *Dr*, *G*, *J* (or *Dy*) and *Tr*.

† Any Hindostani Grammar will explain the Nastalík alphabet. For the Gurumukhí, Carey or Leech's Grammar may be consulted; the latter gives also the common Lande character. The Sindhi, Naskhí, Ochakí, and other local alphabets will all be published in a Sindhi Grammar, which is now being prepared by Captain Stack, of the Bombay Army.

When I afterwards proceeded to read the works of the Sindh Belochīs, in their peculiar dialect of Panjābī, and to converse with the people, I met with a variety of form and idiom which convinced me that the works hitherto published, were by no means sufficiently copious to smoothe the way for those who may be called upon to acquire even a colloquial knowledge of the language.

Syntactical rules have been wholly omitted. Any Hindostānī Grammar will suffice to explain the very few peculiarities, which are met with in the *Jātākī* dialect. It was originally my intention to add an Appendix, containing translations and specimens of the language, the different alphabets, together with the numerals, names of days, of months, and other things, useful to the student. All this has been omitted, as in the first place it was not thought advisable to increase the bulk of the work, and secondly the state of affairs in the Panjāb, and particularly in the Multān territory, urged me to conclude my task as soon as possible.

The Romanised system was adopted, not from any theoretical admiration of its merits, but simply because in India the difficulty of correctly printing the two alphabets together appears practically to be very great. As an instance of innumerable blunders, in the Arabic letters, the *Sindhi Grammar* published by Mr. Wathen, Bombay, 1836, may be adduced; the reader cannot but confess that the Nastalīk could have been easily spared. The system adhered to in the following pages, is the modified form of Sir W. Jones' Alphabet, as explained in the preface of Shakespeare's Dictionary. *

To conclude, I have only to make a full confession of numerous sins of omission and commission, which doubtlessly abound in an attempt at composition in a place where books are rare, and libraries unknown; where all knowledge must be derived from the oral instruction of half educated Natives, and where advice or comparison of opinion must be desired in vain.

CHAPTER I.

OF NOUNS SUBSTANTIVE AND ADJECTIVE.

In the *Jātākī* dialect, nouns are of two genders, masculine and feminine. The neuter is not used, and words which properly speak-

* The only difference is, that accents are used to distinguish the long from the short vowels.

ing belong to that gender, are made masculine or feminine, as usage directs, without any fixed rule.

There are two numbers, singular and plural.

Cases are formed by inflection and the addition of post positions or casal affixes. The following is a short list of those in common use:—

1st. The Genetive is made by adding “dá” for the Nominative singular masculine; “de” for the Oblique singular and the Nominative and Oblique plural masculine; “dí” is added when a singular feminine noun follows; and “dián” precedes plural feminines of all cases. Thus “dá, de, dí” exactly correspond with the Hindostání “ká, ke, kí,” but this language has no equivalent for the *Játakí* “dián.” In some parts of the country, particularly towards the south, “já, je, jí, & c. jián”* are borrowed from Sindhi; even the Hindostání “ká, & c.” are occasionally used.

2nd. The affixes of the Dative are “nú” or “nún” (with the nasal *n*) “kon” and “táin.” In Sindh, “khe” is frequently used, “ko,” more rarely.

3rd. The numerous affixes of the vocative rather come under the head of Interjections than of casal Particles.

4th. The Ablative is denoted by “án, on, te, ten, ton, thon, thín, sití, kanon, kanán” and “kolon,” all signifying “from.” “Men, mon, moh, máh, vich,† manj,” (and rarely madhye) are used for “in.” The long “é” following a consonant, (as Masít-e “in a mosque”) and “in” used with the same limitation, (as hath-in, “with or in the hand”) are often met with in books.

SECTION I.

OF NOUNS SUBSTANTIVE AND MASCULINE.

The masculine noun has seven different terminations, viz.

- 1st. á, declinable, as Ghorá.
- 2nd. á, indeclinable, in the singular as Dáná (a sage).
- 3rd. The silent “h,” as Dánah, (a grain).
- 4th. A consonant, as Putr.
- 5th. A short ũ, as Putră.

* This, however, is quite a corrupted form, never used in Sindhi.

† For which the contraction *ch* is found in poetry, as *Makke-ch*, for *Makke vich*, “in Mecca.”

- 6th. A short or long "i" as Kaví and háthí.
 7th. A short or long "u," as Prabhū or prabhú.

Examples of the Declensions of Nouns.

1st.

Ghorá, a horse.

Singular.

Nom. Ghorá.
Gen. Ghore-dá, de, di, dián.
Dat. Ghore-nún.
Acc. Ghorá.
Voc. E Ghorá, or ghore.
Abl. Ghore-te or-ton.

Plural.

Nom. Ghore.
Gen. Ghoríán or ghoren-dá, de, di, dián.
Dat. Ghoríán nún or ghoren nún.
Acc. Ghore.
Voc. E. Ghore or ghorio.
Abl. Ghoríán or ghoren-te or-ton.

2nd.

Some masculine nouns ending in long "á" are unchangeable in the singular, as Dáná, Rájá, Kabitá, Pitá Lálá, Bába : and a number of Persian and Arabic words, as Maulá, Mullá, Khudá, Mirzá, &c. They are declined as follows in the plural : —

Dáná, * a sage.

Singular.

Nom. Dáná.
Gen. Dáná-dá

Plural.

Nom. Dáne or dáná.
Gen. Danáwán dá.
Voc. E. Dánáwo, dánáo or dáneo.

Sometimes dáná, rájá, and others of this class, are declined in the singular, like dánah, (a grain) e. g. "dane munsa dá," of a wise man. In common conversation this is generally the case.

* In the following examples when the other cases are the same as the Genetive, the latter only will be inserted.

3rd.

Dánah, a grain.

*Singular.**Plural.**Nom.* Dánah.*Nom.* Dane.*Gen.* Dáne-dá.*Gen.* Dánián-dá.*Voc.* E. Dáne.

4th.

Puttar or putr, * a son.

*Singular.**Plural.**Nom.* Puttar or putr, a son.*Nom.* Puttar, putr or puttrán.*Gen.* Puttar or putra or putre- †
dá.*Gen.* Puttrán, putren or putrindá.*Voc.* E. Putro.*Voc.* E. Putrá.

5th.

Towards the south, a short vowel is often added to the final consonant of masculine nouns as in Sindhí. ‡

Putra, a son.

*Singular.**Plural.**Nom.* Putra. §*Nom.* Putra, or putrán.*Gen.* Putra-dá.*Gen.* Putrán or putráni-dá.

* So the numeral noun "ik" or "hik" (one) becomes *ikandn* in the Nominative and Oblique plural.

† This is, generally speaking, a poetical form.

‡ These final vowels are so quickly pronounced that the student will at first find some difficulty in detecting and distinguishing between them. In Arabic Grammar, Fath, Kasr and Zamm are assumed to be half the value of Alif, Ya and Wau. In *Játakí* and *Sindhí*, these short terminating vowels are equivalent to about one quarter of the long letters which belong to the same class. Such as they are, however, the student must learn to pronounce them, otherwise the sound of the language would be completely changed. They are never written in the *Panjábi*, *Multáni* or *Játakí* works, except in the *Grantha* and other compositions in the *Gurumukhi* character, and the *Naskhi* form of the Arabic Alphabet.

§ Sometimes too the masculine noun ends in "u" as *Putru*, and in the Oblique singu-

6th.

Masculine nouns ending in a short or long "i" as *kavi* (a Poet) and *háthi*, are generally speaking unchangeable in the singular, but declined as follows in the plural :

Kavi, * a poet.

Singular.

Plural.

Nom. *Kavi*.

Nom. *Kavi* or *kavián*.

Gen. *Kavi* or *Kavi-dá*.

Gen. *Kavián* or *kavián-dá*.

Voc. *E. Kavi* or *Kaviá*.

Voc. *E. Kavió*.

7th.

Prabhu or *prabhú*, † a lord.

Singular.

Plural.

Nom. *Prabhu* or *prabhú*.

Nom. *Prabhu* or *prabhú*.

Gen. *Prabhu* or *prabhú-dá*.

Gen. *Prabhuán*, *prabhúán* or *prabhán-dá*.

Voc. *E. Prabhúó*.

SECTION II.

OF NOUNS SUBSTANTIVE AND FEMININE.

The feminine noun has six different terminations, viz.—

- 1st. í as *Ghorí*, (a mare).
- 2nd. ĭ as *Matĭ*, (an opinion).
- 3rd. á as *Dayá*, (compassion).
- 4th. ă as *Gală*, (a word).
- 5th. h as *Jagah*, (a place).
- 6th. a consonant as *Mat*, *Gall*, &c.

* This word (like the following *Prabhu*) would generally in conversation change its final short vowel into the long letter corresponding with it. The probable reason of the permutation is that the people find greater facility in pronouncing a dissyllabic word as an Iambus, (~ ^) than as a Pyrrhic (~ ^ ^).

† Generally pronounced by the Vulgar, *Pirbhú* or *Pribhú*. As the word is Sanscrit, it is almost always corrupted by the Muschians.

Examples of the Declensions of the feminine nouns.

1st.

Ghorí, a mare.

*Singular.**Plural.**Nom.* Ghorí.*Nom.* Ghoríán.*Gen.* Ghorí-dá, de, di, dián.*Gen.* Ghoríán * or ghorín-dá, de,
di, dián.*Dat.* Ghorí nún.*Dat.* Ghoríán or ghorín nún.*Acc.* Ghorí.*Acc.* Ghoríán.*Voc.* E. Ghorí.*Voc.* E. Ghorío.*Abl.* Ghorí-te or ton.*Abl.* Ghoríán or ghorín-te or-ton.

The feminine substantive ending in "í," is the most common form of that gender.

2nd.

Matí, † an opinion.

*Singular.**Plural.**Nom.* Matí.*Nom.* Matín.*Gen.* Matí-dá.*Gen.* Matín or matíán-dá.

3rd.

Dayá, compassion.

*Singular.**Plural.* ‡*Nom.* Dáyá.*Nom.* Dáyá.*Gen.* Dáyá-dá.*Gen.* Dáyán or dayáwán-dá.*Voc.* E Dayo.

* The difference between the masculine *Ghoríán* and the feminine *Ghoríán* is, that the former has a short, and the latter a long "i." This distinction is always observed in speaking, but in the Arabic character both are written the same e. g. گھوریاں

† As in the masculine noun, the short "i" is generally changed into long "i," so in feminine substantives the short "i" is usually elided; e. g. *Matí* becomes *Mat*, or by reduction of the last letter *Matí*.

‡ This plural is merely given as a form: such a word would of course always be in the singular number.

4th.

Gala, * a word.

*Singular.**Plural.**Nom.* Gala*Nom.* Galán.*Gen.* Gala-dá*Gen.* Galán-dá,*Voc.* E. Galo.

5th.

Jagah, † a place.

*Singular.**Plural.**Nom.* Jagah*Nom.* Jagahán.*Gen.* Jageh-dá*Gen.* Jagahen or jagahín-dá.*Voc.* E. Jagaho.

6th.

Gall, a word.

*Singular.**Plural.**Nom.* Gall*Nom.* Gallán.*Gen.* Gall-dá*Gen.* Gallán or gallen or gallín-dá.*Voc.* E Gallo.

“Matt” is declined in the same way.

In practice, the feminine declensions are two in number, viz. The 1st and the 6th. The 2nd and 4th are only used by those who have acquired a Sindhi pronunciation; in books (especially of the Hindús) they are frequently met with. The 3rd declension is a Sanscrit, and the 5th, a Hindustáni word; consequently both are rare.

* *Gala* is the classical, *Gall* the common form of the word. The “l” is reduplicated (as in *Matt* from *Matí*) when the final short vowel is elided, and this is often found in monosyllabic words, probably in order to prevent confusion. For instance in this case the reduplication serves to distinguish between *Matt*, “an opinion,” and *Mat*, “do not.”

† Feminine nouns ending in “h” are seldom met with in Játaki. *Jagah* is a Hindostáni form, occasionally used, it is true, but much more generally *Jágán*. So *Múdah* (female) becomes *Madí*, &c. &c.

Rules on the subject of gender, as in Hindostání are very vague. Many words have no fixed gender and it often happens that those which are masculine in one part of the country, are used as feminine in another. So in speaking Urdú, the Concani * calls "maktab" and "pyár" feminine nouns, whereas in Upper India the former is always, and the latter generally, masculine.

In Játakí as in Sindhí, the patronymic noun is formed by adding "áuí" to the proper name; as Mahmúdání, a son of Mahmúd; Kambarání, a descendant of Kambar.

Verbal nouns are obtained: —

1st. By adding "andar" or "indar" to the root of the verb, as akhandar, a speaker. Karan, to do, forms kandar or kandal, a doer.

2dly. By adding "hár" to the infinitive of the verb, as mangan-hár, a beggar.

An intensive form of the noun is obtained by adding "ár" to the original, e. g. jins, property, "jinsár," a large property.

To some nouns, particularly those denoting sounds, the masculine termination "az" is added, in order to give an intensive meaning, e. g. kúk. s. f. cry (of women, &c.) kúkať. s. m. a loud crying.

SECTION III.

OF NOUNS ADJECTIVE.

Masculine Adjectives usually end in long "á" as hachhá (good), or short "ă" † as sundara (handsome), or a consonant, as sabh (all). The following is an example of the declensions of a masculine adjective prefixed to a noun substantive: —

Hachhá ghorá, a good horse.

Singular.

Nom. Hachhá ghorá.

Gen. Hachhe ghore-dá.

Plural.

Nom. Hachhe ghore.

Gen. Hachhián (or hachhe) ghorián-dá.

Voc. E. Hachhe ghorio.

* See Taleem Namuh by Mahomed Muckba, Esq. p. p. 52 and 53. Vol 2. Edit. 3rd, Bombay.

† No example is given of these forms, as they exactly follow the declensions of the noun which they resemble in termination. So *sundara* is indeclinable in the singular, and forms *sundarán* in the plural, like *putra*.

Feminine Adjectives * usually end in a consonant or in long "í." The following is an example of their declension : —

Hachhí ghorí, a good mare.

Singular.

Plural.

Nom. Hachhí ghorí.

Nom. Hachhí (or hachhíán)
ghoríán.

Gen. Hachhí ghorí-dá.

Gen. Hachhí (or hachhíán) gho-
ríán-dá.

Voc. E. Hachhí (or hachhío)
ghorío.

The Adjectives *sabh* † and *hor* (another) have the peculiarity of inserting "nán" before the casual affixes of the oblique plural.

Sabh, all.

Plural.

Nom. *Sabh*.

Gen. *Sabhán*, *sabhnán*, or *sabhnán-dá*.

Voc. E. *Sabho*.

Comparatives and superlatives are formed in three ways.

1st. By repetition of the positive, with or without a casual affix, as "waddá waddá" or "wadde dá waddá," bigger.

2nd. By such words as *khara* and *adhik* for the comparative; and *bahut*, *bahu*, *bahún*, *ghaná*, *atí*, &c. &c. for the superlative.

3rd. By the use of casual affixes as "kanon, sití, &c." For example "isa kanon, uhhachhá hai" (that is *better* than this); and "ih sabha kanon hachhá hai" (this is better than all; i. e. best).

* Feminine Adjectives, ending in a short vowel, especially when prefixed to substantives, almost always lose their final vowels and are declined like "gall," a word.

† For *sabh*, *hab* is often used.

CHAPTER II.

OF PRONOUNS.

The Personal Pronouns are : —

1st. Main, mán, or má, I.

2nd. Tún or ten, thou.

3rd. Uha, uh or wuh, he.

They are declined in the following manner : —

1st. Person.

Singular.

Plural.

Nom. Main, mán, or má. *

Nom. Asin, § asán.

Gen. Merá, † medá, mendá, ‡
mudhadá.

Gen. Assándá, ádá, asándá, sádá.

Dat. & Acc. Mekon, men-
kon, mainkon, menún,
mudhanún.

Dat. & Acc. asánún, sánún.

Abl. Menthe, mainthon, main-
thín, medethon, medeko-
lon, mendekolon, mujh-
kanon.

Abl. Sánthe, sánte, sánthín (or
-thon), as ánthon (or-the).

2nd. Person.

Singular.

Plural.

Nom. Tún, or ten.

Nom. Tusín, tusán.

Gen. Tedá, terá, tendá, ton-
dá, taudá, taundá, tu-
dhadá.

Gen. Tusádá, tuhádá, tuhadá,
thwádá.

* In composition "e" is often used as an affixed Pronoun of the 1st. person e. g. sáth-e, "with me."

† Like the casual affix "dá," the Genitives of Pronouns assume four forms e. g. mendá mende, (or mendíán) mendi, mendíán.

‡ The words *undeclined* are those which are most generally used in conversation The others are either of local use, or confined to books,

§ Asin is the Panjábí; asán the Multáni and Játakí Nominative.

<i>Dat. & Acc.</i> <i>Tenún</i> , tunnú, tuhnún, tudhanún, tenkon.	<i>Dat. & Acc.</i> <i>Tusánun</i> , tuh-ánún, thwánún.
<i>Voc.</i> E Tún.	<i>Voc.</i> E Tusín, or tusán.
<i>Abl.</i> Toton, <i>tunte</i> (-thon or thín) tuhte, tudhate.	<i>Abl.</i> <i>Tusánthon</i> , tuháthon, thwánte.

3rd. Person. *

<i>Singular.</i>	<i>Plural.</i>
<i>Nom.</i> <i>Uha</i> , uh, wuh.	<i>Nom.</i> <i>Uhe</i> , unhán,
<i>Gen.</i> Usadá, <i>uhdá</i> , ohdá.	<i>Gen.</i> Uhíndá, unadá, unhadá, unhánda, uhándá, uwándá, wándá.
<i>Dat. & Acc.</i> <i>Usnún</i> , <i>uhnún</i> , uskon, unkhon.	<i>Dat. & Acc.</i> <i>Unhánun</i> , unkon, wánton.
<i>Abl.</i> <i>Uste</i> , <i>uhte</i> , unghanon.	<i>Abl.</i> Unhá-kanon, unhán-thín, wánthín.

The Proximate Demonstrative "íha" is declined as follows : —

<i>Singular.</i>	<i>Plural.</i>
<i>Nom.</i> íhá.	<i>Nom.</i> íhe, íhán, ínhán.
<i>Gen.</i> íhadá, isadá.	<i>Gen.</i> íhándá.

The Common or Reflective Pronoun, * as in Hindostání, has two forms of the oblique cases : —

Singular & Plural. †

<i>Nom.</i> Ap, ape.
<i>Gen.</i> Apná or apadá.
<i>Dat. & Acc.</i> Apnú, or apnenún.

* The emphatic form of this Pronoun is uhi or uho, "that very," (person &c.) Fem. uha. In the Genitive, usadá, uhíndá, or hunedá. of both genders. So ího, "this very" (person, &c.) Fem. íhá; Genitive, isídá, &c.

* In books, the Persian "*khud*" is very much used.

† The Hindostání form "*ápas*" is occasionally met with.

The Interrogative Pronouns are of two kinds; the first applying to persons and things, the second to inanimate objects only:—

Kaun, who, which, what ?

Singular.

Nom. Kaun.

Gen. Kisdá, kisadá, *kenhadá*,
kíhadá, kízhádá.

Dat. Kisanún, *Kenhnún*, Kinha-
nún, kíhanún.

Kyá, what ? (of things).

Singular & Plural.

Nom. Kya kí.

Gen. Kádá, kahdá *kenhdá*.

Dat. Kánún, kahnún or *kenhnún*.

The Relative Pronoun.

Jo, who, which, what.

Singular.

Plural.

Nom. Jo je.

Nom. Jo, je.

Gen. Jisadá, janhadá, jíhadá, *Gen.* Jindá, jihándá, *jínhándá*,
jenhadá. *jenhándá*.

Occasionally the feminine form "já," as used in Sindhí, may be met with. The plural Nominatives and the Oblique cases of both genders are the same. The correlative "so" is in like manner turned into "sá" to form a feminine.

The Correlative Pronoun.

So, that, he, &c.

Singular.

Plural.

Nom. So, se, te.

Nom. So, se, te.

Gen. Tisadá, tihadá, tenhadá.

Gen. Tinadá, tinándá, tenhándá
tenhándá.

The Indefinite Pronouns are of two kinds ; the first relating to numbers, the second to quantity.

Indefinite Pronoun of Number. Koí, a, an, any &c.

Singular & Plural.

Nom. Koí, kíá, ko, ke, ká. * *Gen.* Kisídá, kisedá, kahindá.

Indefinite Pronoun of Quantity.

Kujh, Some.

Nom. *Kujh*, kuchh, some. *Gen.* Kisídá, kisedá, kahindá,
kujhadá.

The chief Pronominal Adjectives are as follow :—

1. Aysá, ihá, ajihá, ejahá (fem. aysí, ihí, &c.); of this sort, such.
2. Jaysá, jihá, (fem. jaysí, jehí.), of such sort, such as.
3. Kaysá, kihá, (fem. kaysí, kihí), of what sort ?
4. Jaysá, jihá, (fem. as above), of that sort.
5. Waysá, uho-jihá, (fem. who-jihí and uaysí, the latter very little used), in that manner.
6. Jaunsá, jehrá, † whatever sort of.
7. Taunsá, tehrá, terá, that sort of.
8. Kaunsá, kehrá, which ? what sort of ?
9. Kitaná, how much ? how many ? and so on as in Hindostání, jitaná, itaná, utaná, &c. &c.

Many of the Pronouns are compounded, as for example :—

1. *Ihá-jihá*, (fem. íhí-jihí) such, this-like.
2. *Jo-Koí*, *jiko*, (fem. *jiká*), whoever.
3. *Jo-Kujh*, whatever.
4. *Koi-Koi*, some or other.
5. *Kujh-Kujh*, something or other.

* *Ká* is sometimes used, like *já* and *sá*, as a feminine form of the Pronoun. It then becomes a Sindhí word. In the Genitive, *koí-dá* and *káí-dá* are occasionally used.

† The Feminine forms, being regular, are omitted.

And many others of the same description, which will easily be understood, on account of their analogy to similar formations in Hindostání.

When such compounds are used in the Oblique case, each member is usually speaking inflected as,—Nom. Jo-koí, Gen. Jis-kisídá, &c. &c. In many cases (as decided by usage), the last member only is declined, and this is the common form in conversation.

CHAPTER III.

OF VERBS.

SECTION I.

The Infinitive ends either in “ná,” as in Hindostání, or in “an,” added to the root, as karaná or karan, “to do.” In both cases it is a verbal noun * masculine, † declined like ghorá or puttar, and is used, generally speaking, in the singular number only. Sometimes it is formed like the Sindhí Infinitive in “nũ” e. g. karanũ, and is then declined like putrũ.

The root, as in Hindostání, is found by rejecting the final “ná” or “an” of the Infinitive. It is also a common verbal noun, generally of the feminine gender, as e. g. from máraná or máran is found már, which signifies either “beat thou” or “a beating.”

Synopsis of the additions to the roots of Verbs.

INFINITIVE.

<i>Singular.</i>		<i>Plural.</i>	
M.	F.	M.	F.
ná,	ní.	ne,	niz or níán.
	or,		or,
an,	an.	an,	an.

* So in English, the simple form of the Infinitive ending in “ing” (as, “doing”) and the compound Infinitive “to do” are nouns substantive, and verbals in as much as they, derive their existence as significant words from the verbs to which they belong.

† The Infinitive forms its feminine as a noun of the 1st. Declension e. g. *karaná*, *karaní* etc.

PAST PARTICIPLE.

<i>Sing.</i>		<i>Plur.</i>	
M.	F.	M.	F.
iá,	í.	ie or ián,	ín or ián.
or,		or,	
á,	í.	e,	in' or ián'.

PRESENT PARTICIPLE.

<i>Sing.</i>		<i>Plur.</i>	
M.	F.	M.	F.
dá,	dí.	de, or-díán,	dín or díán.
or,		or,	
endá,	endí.	ende, or-endíán,	endían or endián.
or,		or,	
andá,	andí.	ande,	andían.

PAST CONJUNCTIVE PARTICIPLE.

Singular & Plural.

The Root e, ke, kai, kar, karán, karke, karkar.

AORIST.

<i>Sing.</i>		<i>Plur.</i>	
án,	en,	ín,	an.

FUTURE.

Masculine and feminine.

sán,	* sín,	sí.	sín,	so,	san.
	or,				
	sen,	se.			

IMPERATIVE.

un, The Root.	e,	un,	o,	an.
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* I have omitted the other termination of the Future in *angá* &c. as it is a purely Pan-jabi one.

PRECATIVE IMPERATIVE.

	<i>Singular.</i>			<i>Plural.</i>	
None.	jo, *	ie.	je,	je,	jan.
	io,	iwe.	ie,	jo,	
	ie,			io,	an.
	je,			yo,	

SECTION II.

Of the Auxiliary Verbs.

They are two in number, viz :—

1st. Howan, howaná or honá, to be.

2d. Thíwan, or thíaná, to become.

The Verbs wanjaná and jauná “to go”, may so far be considered as belonging to this class, that they are used to form certain tenses of the Passive voice.

THE ROOT.

Ho, be thou!

INFINITIVE.

Howan, howaná, honá, being.

PAST PARTICIPLE.

<i>Singular.</i>		<i>Plural.</i>	
M.	F.	M.	F.
Hoiá, † been,	hoí.	Hoie,	hoín or hoián.

* This is a form derived from the Sindhi: the regular plural in that Dialect would be “ja.”

† In the Gurumukhí character, “i” is almost invariably used before “à”, instead of “y,” which would be usual in Devanágari. So we find hoíá for hoyá; thiá for thiyá, &c.

PRESENT PARTICIPLE.

Hundá, being, hundí. Hunde, hundíán.

PAST CONJUNCTIVE PARTICIPLE.

Ho, hae, hoi, hoke, hokar, hokare.

Hokarán, hokarke, having been.

PRESENT TENSE.

*Singular.**Plural.*

- | | |
|--|---------------------------------------|
| 1st. Main hán, ahán, án, I am. | 1st. Asán, hán, hánge, án, we are. |
| 2nd. Tún hain, hen áhen, en, thou art. | 2nd. Tuáyá ho, hohu o, ye are. |
| 3rd. 'Uha hai, ahe, * áe, e, he is. | 3rd. 'Uhe hain, hásan, ain, they are. |

PAST TENSE.

*Singular.**Plural.*

- | | |
|--|---|
| 1st. Haisán, sán, há, áhá, hasán, sí, I was. | 1st. Haisáenge, haisán, hoe, ahe, se, hase, sí. |
| 2nd. Haisen, sáen, há, áhá, sán, hasán, sí. | 2nd. Haisáenge, haisán, hoe, ahe, se, hase, sí. |
| 3rd. Haisí, thá, há, † ahá, sán, hasá, sí. | 3rd. Haisáin, hasín, hoe, ahe, se, hase, sí. |

AORIST.

*Singular.**Plural.*

- | | |
|--|--------------------|
| 1st. Howán, hoiún, I may, shall, &c. &c. be. | 1st. Howún, ho'ún. |
| 2nd. Howén, hoen. | 2nd. Howo, ho. |
| 3rd. Howe, hoe. | 3rd. Howan, hon. |

* *Náhe* is used for *na* or *nah áhe*, "it is not". *Has* is synonymous with the Hindostán *hai usko*, "there is to him" "he has."

† For *há*, *hái* and *hái* are sometimes found. *Atus*, with the affixed Pronoun means *thá usko*, "there was to him," "he had".

FUTURE.

Singular.

- 1st. Hosán, howángá, how-
ungá, I shall or will be.
2nd. Hosen, hosín, howengá.
3rd. Hose, hosí, howegá.

Plural.

- 1st. Hosán, hosún, howánga.
2nd. Hoso, howoge.
3rd. Hosan, hoange.

The Imperfect is formed by subjoining one of the numerous signs of the past tense of the Auxiliary Verb to the present participle active e. g. —

Main hundá ha, (or sí or sán) &c. Asán hunde hoe, &c.

The Pluperfect is procured by affixing one of the forms of the past tense of the Auxiliary Verb to the past participle active e. g. —

Main hoia há (or sí or sán, &c.) Asán hoie hoe, &c.

The Precative Imperative is formed as in Hindostání, by affixing "ie" or "io" to the root, for the singular and plural; e. g. —

'Ap ákhie (or ákhio), pray speak (addressed to one person).

The termination "iwe," as áp ákhíwe, belongs to the third person. In the second, we find "ijo, íje," or "je" as áp ákhíje or ákhje; and the Sindhí "jo," as áp ákhjo is sometimes met with.

The Negative Imperative is formed by prefixing "na, ma * mat or matán," to the Affirmative Imperative; e. g. —

Na (ma or mat) kar, do not !

As in Hindostání and the modern dialects of Upper India, no regular form of Subjunctive Mood is to be found in Játakí. Our present Subjunctive is expressed by the Aorist with the Conjunction "je," if; e. g. —

Je main howán, if I be. Je asán howún, if we be.

For the past tense of that Mood, the Present Participle is used with the Conjunction "je," if, e. g. —

Je main hundá, if I had been. Je asán hunde, if we had been.

The Auxiliary Verb thíyan or thianá, "to become," is conjugated as follows:

* Ma is a Sindhí ; mat a Hindostání form.

THE ROOT.

Thí, "become thou"

Infinitive and Verbal Noun.

Thíván, thíaná, thíyan, thivná.

PAST PARTICIPLE.

*Singular.*M.
Thiá,F.
thí.
or,
th',M.
Thíye,
Thié,
or
Tháe.*Plural.*F.
thián.

PRESENT PARTICIPLE.

Thíndá,

thíndí.

Thínde.

thíndián.

PAST CONJUNCTIVE PARTICIPLE.

Thí, thái, tháe, thái, thíke, kar, karán, karke.

AORIST.

*Singular.*1st. Thíwán.
2nd. Thíwen or tháen.
3rd. Thíwe or tháe.*Plural.*1st. Thíwún or tháún.
2nd. Thío or tháo.
3rd. Thíwan, tháin or thín.

FUTURE.

*Singular.*1st. Thísán, thíwángá or
thíungá.
2nd. Thísen, thísín or thíwengá
3rd. Thíse, thísí or thíwegá.*Plural.*1st. Thísún or thíwángé.
2nd. Thíso or thíwage.
3rd. Thísan or thíwange.

PRESENT DEFINITE.

Main thindá hán.

INDEFINITE,

Main thindá.

IMPERFECT.

Main thindá há.

PERFECT.

Main thiá. *

PLUPERFECT.

Main thiá há.

There are two forms of the verb "to go," which is used as an Auxiliary in some tenses of the Passive;

1st. Jáwan or jáoná.

2nd. Wanjan, wanjaná wor ená.

They are conjugated as follows —

THE ROOT.

Já, Go thou.

Infinitive or Verbal Noun.

Jáwan or jáoná.

PAST PARTICIPLE.

*Singular.**Plural.*M.
Gaiá,F.
gai.M.
Gaye,F.
gaián.

* With this tense the affixing Pronouns are used e. g.—

Singular.

1st. Thim or thim. 2nd. Thioi 3rd. Thius.

PRESENT PARTICIPLE.

Jándá,		jándí.	Jánde,		jándián.
	or,			or,	
Jaundá,		jaundí.	Jaunde,		Jaundián.

PAST CONJUNCTIVE PARTICIPLE.

Já, jáí, jaè, jáke,-kar,-karán,-karke,-karkar.

AORIST.

	<i>Singular.</i>		<i>Plural.</i>
1st.	Jáwán or jáon.	1st.	Jáún.
2nd.	Jáwen.	2nd.	Jáo.
3rd.	Jáwe or jáe.	3rd.	Jáwan or ján.

FUTURE.

	<i>Singular.</i>		<i>Plural.</i>
1st.	Jásán.	1st.	Jásún.
2nd.	Jásén or jásin.	2nd.	Jáso.
3rd.	Jáse or jásí.	3rd.	Jásan.

PRESENT DEFINITE.

Main jándá hán.

PRESENT INDEFINITE.

Main jándá.

IMPERFECT.

Main jándá há.

PERFECT.

Main gaiá.

PLUPERFECT.

Main wanjiá há.

The Auxiliary verb wanjaná * is thus conjugated:—

THE ROOT.

Wanj, † Go thou.

INFINITIVE.

Wanjaná.

PAST PARTICIPLE.

Singular.

M.
Wanjá.

F.
wanjí.

M.
Wanje.

Plural.

F.
wanjían.

PRESENT PARTICIPLE.

Singular.

M.
Wanjadá,

F.
wanjadí.

M.
Wanjade,

Plural.

F.
wanjadián.

PAST CONJUNCTIVE PARTICIPLE.

Wauj, wanje, wanjke, wanjkar, -karan, -karke, -karkar.

AORIST.

Singular.

1st. Wanján.
2nd. Wanjén.
3rd. Wanje.

Plural.

1st. Wanjún.
2nd. Wanjo.
3rd. Wanján.

* The above is the most common form. *Wanjan* and *wená* are also used. The Past Participle of the latter is *wia*, the Pres. Part : *wená*. The Future is regularly formed but the Aorist is partly borrowed from *wanjaná* e. g.—

Aorist.

Singular.

1st. Wanján.
2nd. Wen.
3rd. Waye or we.

Plural.

1st. Wanjún.
2nd. Wan.
3rd. Wen.

† In the Imperative *waw* is also used.

FUTURE.

	<i>Singular.</i>		<i>Plural.</i>
1st.	Wanjasán.	1st.	Wanjasín.
2nd.	Wanjasen or wanjasín.	2nd.	Wanjaso.
3rd.	Wanjose or wadjasí.	3rd.	Wanjasan.

PRESENT DEFINITE.

Main wanjadá hán.

INDEFINITE.

Main wanjadá.

IMPERFECT.

Main wanjadá há.

PERFECT.

Main wanjiá.

PLUPERFECT.

Main wanjiá há.

SECTION III.

Conjugation of the Regular Transitive Verb, ákhaná, "to speak or say."

THE ROOT.

A'kh, speak thou.

Infinitive or Verbal Noun.

	<i>Singular.</i>		<i>Plural.</i>
M.		F.	
	Akhaná, or akhan,	akhaní.	
		M.	F.
		A'khane,	ákhaínán.

Speaking or to speak.

PAST PARTICIPLE.

A'khía.

akhí.

A'khie.

akhíán.

Spoken.

PRESENT PARTICIPLE.

'Akhadá,	akhadí.	'Akhade,	akhadíán.
or,		or,	
Akhandá,	akhandí.	Akhande,	ákhandiá.

Speaking.

AORIST.

*Singular.**Plural.*

1st. 'Akhán, I may speak.	1st. 'Akhún.
2nd. 'Akhén.	2nd. 'Akho.
3rd. 'Akhe.	3rd. 'Akhan.

PRESENT INDEFINITE MASCULINE.

*Singular.**Plural.*

1st. 'Akhadá * hán or akhan'án, I am speaking.	1st. 'Akhade hán or akhnain.
2nd. 'Akhadá hez or akhnain.	2nd. 'Akhade ho or ákhdeo.
3rd. 'Akhadá hai or akhdáe.	3rd. 'Akhade hain or ákhaden.

The forms ákhan'án, ákhnain &c. &c. are contractions of the present participle and the Auxiliary verbs.

PRESENT INDEFINITE FEMININE.

*Singular.**Plural.*

1st. 'Akhani-án, I am speaking.	1st. 'Akhaniyán.
2nd. 'Akhani-en.	2nd. 'Akhaniyáno.
3rd. 'Akhani-e.	3rd. 'Akhaniyán.

* The Fem. termination in the sing. is—"i" : in the plural—"ián".

PERFECT TENSE.*Singular.**Plural.*

- | | |
|---|--|
| 1st. Main or main ne akhiá or ákhum, * I spoke. | 1st. Asín, asáne or asán ákhiá. |
| 2nd. Tún, tune akhiá, or akhiói, ákhiái or akhióin. | 2nd. Tusín, tusáne or tusán ákhiá. |
| 3rd. U'h, usane or us ákhiá or ákhus. | 3rd. Uhe, unaháne or unahán ákhiá, or ákhione or akhone. |

FUTURE TENSE.*Singular.**Plural.*

- | | |
|---|------------------------------|
| 1st. Main ákhangá † or ákhsán, I shall or will speak. | 1st. Asán ákhänge or ákhsún. |
| 2nd. Tún ákhangá ákhseñ or ákhsín. | 2nd. Tusín ákhoge or ákhso. |
| 3rd. 'Uh ákhega, ákhse or ákhsi. | 3rd. 'Uhe ákhange or ákhsan. |

IMPERATIVE.*Singular.**Plural.*

- | | |
|--------------------------------|----------------------------|
| 1st. Main ákhán, let me speak. | 1st. Asín ákhon or ákhah. |
| 2nd. Tún ákh or ákhu. ‡ | 2nd. Tusín akho or ákhahu. |
| 3rd. Uh ákhe. | 3rd. 'Uhe ákhan. |

The Subjunctive Mood has three tenses, viz.—the Present, the Past, and the Future.

The Present Subjunctive is the same as the Aorist of the Indicative, with the addition of "je" prefixed e. g.—

Je main ákhán, if I speak. Je asín ákhún, if we speak.

* This and the corresponding forms are instances of the Pronouns affixed to the past participle. Occasionally they are to be met with in neuter verbs, as gaioin for gaiá tún.

In most cases, these affixed pronouns may have a double meaning: or in other words may be either nominatives or datives. So dittus may mean either "he gave," or (he) "gave to him" the "s" standing for either usne or usko. Thus may be either "he became," or, "it became to him" (he acquired, &c.). This double usage is probably derived from the Sindhi dialect.

† The Fem. terminations are "i" and "ian."

‡ This short terminating vowel in the 2d. Person sing. and plural is a Sindhi form, but never becomes "i," as it does when affixed to transitive verbs in that Language.

PERFECT OR PAST SUBJUNCTIVE.

*Singular.**Plural.*

1st. Je main,	} ákhadá * or ákhanda † If I etc. spoke.	1st. Je asán,	} ákhade or ak- hande.
2nd. " tún,		2nd. " tusán,	
3rd. " uh,		3rd. " uhe,	

The Future Subjunctive is formed by prefixing "je" to the Future Indicative.

SECTION IV.

OF THE PASSIVE VOICE.

The Passive Voice is formed by adding jáwan, jáoná or wanjan, wanjaná, wená, to the past participle of the active verb. So saddaná v. a "to call," becomes saddiá jáwan or wanjaná, "to be called" in the singular, and sadde jáwan or wanjane, "to be called," plural. It is not necessary to give any detailed examples of this form, as there are no irregularities, and although very simple, still it is not generally used.

The Játakí dialect, like the Sindhí, possesses a distinct Passive Voice. In the former, the only change made is the insertion of long "i" after the radical letters of the verb. This is done in the present participle, the Aorist, and the Future. The past participle has two forms: either it is the same as that of the active, ‡ or it adds "elá" or "ewlá" § to the root of the verb, as marelá, slain, jalewlá, burned. No change takes place in the Infinitive, and the Root is the second person singular of the active verb.

CONJUGATION OF THE PASSIVE VERBS.

PAST PARTICIPLE.

*Singular.**Plural.*

M.	F.	M.	F.
Karelá,	karelí.	Karele,	karelián.
Made or done,			

* The Feminine formed as usual.

† The form ákhanda is merely a variation of the present participle ákhadá.

‡ Which, though made to belong to the active verb, is always in reality a purely passive form.

§ It would be well if this form were more noticed in Hindostáni than it generally is.

PRESENT PARTICIPLE.

*Singular.**Plural.*

M.

Karidá,

F.

karidí.

M.

Karíde.

F.

karidíán.

Being made.

AORIST.

*Singular.**Plural.*

1st. Main karíán, I may be made.

1st. Asin karíún.

2nd. Tún karién.

2nd. Tusin kário.

3rd. 'Uh karie.

3rd. 'Uhe karían.

FUTURE.

*Singular.**Plural.*

1st. Main kariángá r or karísán, I shall or will be made.

1st. Asin kariáuge or karísún.

2nd. Tún kariengá, karisen or karísín.

2nd. Tusin karioge or kariso.

3rd. 'Uh kariégá, karise or karisí.

3rd. 'Uhe kariange or karísán.

PRESENT DEFINITE.

Main karidá hán, I am being made.

INDEFINITE.

Main karidá, I am made.

IMPERFECT.

Main karidá há (or sán), I was being made.

PERFECT.

Main kariá, I was made.

PLUPERFECT.

Main karíá há (or sán), I had been made.

Concerning this Passive Voice, it must be recollected, that although much used in pure Panjábí and frequently occurring in *Játakí* books and writings, it is seldom heard in conversation and is all but unknown to the vulgar.

SECTION V.

OF THE CAUSAL VERB.

The Causal Verb * is of two kinds.

1st. The simple causal or that which expresses the causing another to do a thing.

2nd. The double causal, or the causing of a person to cause another to do a thing.

The simple causal is obtained by inserting a long "á" † after the radical letters, as follows :

CONJUGATION OF THE SIMPLE CAUSAL VERB.

THE ROOT.

Kará, "cause thou to do".

INFINITIVE OR VERBAL NOUN.

Karáná or karáwná, causing (or to cause) to do.

PAST PARTICIPLE.

*Singular.**Plural.*

M.	F.	M.	F.
Karáiá,	karái.	Karáe,	karáián.

* These forms, though quite as copious and complete as the Hindostani Verbs of the same class, are not nearly so extensive as in the Sindhi dialect, where a third and even a fourth derivative may be met with.

† Sometimes, though rarely "o" is introduced instead of or equivalent to "á" e. g.—from bolaná, to say, are formed buláná or buloná.

PRESENT PARTICIPLE.

Karáwindá, karáwindí. Karawinde, karáwindián.
 Causing to do.

PAST CONJUNCTIVE PARTICIPLE.

Kará, karáe, karái, karáke, &c.—as in the other verbs.

AORIST.

*Singular.**Plural.*

1st. Karáwán, * I may &c. cause to do.	1st. Karáwun.
2nd Karáwen.	2nd. Karáwo.
3rd Karáwe.	3rd. Karáwan.

FUTURE.

*Singular.**Plural.*

1st. Karáwángá or karáwsán. I shall etc cause to do.	1st. Karáwángo or karáwsún.
2nd. Karawengá or karáwsín.	2nd. Karáwoge or karáwso.
3rd. Karawegá or karáwsí.	3rd. Karáwange or karáwsan.

PRESENT DEFINITE.

Main karáwindá hán, I am causing to do.

PRESENT INDEFINITE.

Main karágindá, I cause to do.

IMPERFECT.

Main karáwindá há (or sán) I was causing to do.

* In this, as well as in other parts of the verb, the "w" is introduced after the incremental "á" most probably to facilitate pronunciation by doing away with the hiatus which would otherwise take place.

PERFECT.

Main or main ne karáíá, I caused to do.

PLUPERFECT.

Main or main ne káráíá há, I had caused to do.

The double causal is obtained by inserting "wáw" * after the radical letters e. g.—from the root kar (do), come the simple causal kará (cause to do), and the double causal karwáw (make another to cause to do). As a general rule this form is not much used, except in books and by educated men, and it will not be necessary to conjugate it, as the terminations are in all points exactly like those of the simple causal.

Causal verbs, it must always be remembered, are active and transitive. The passive voice is formed by inserting a long "í" (in the simple causal), after the incremental "á", as e. g.—in the Aorist, main karáíán, I may be caused to do. In the double causal the "í" is introduced after the two first incremental letters (*wá*), as e. g.—in the Aorist, main karwáíán, I may be made to cause to do. No example will be given of these forms, as they are very rarely used in Játakí, and would be quite unintelligible to the common people.

Compound verbs are found exactly as in Hindostání. Potential verbs however are made by adding sakhaná or saganá (to be able) to the Infinitive or to the root of another verb e. g.—Main karná (karne karan or kar) sagsán, I shall be able to do.

SECTION VI.

A short list of Irregular Verbs.

Root.	Pres Participle.	Past. Participle.
'Ao or ach come.	'Aundá.	'Aíá.
'An, bring.	'Andá.	'Aníá or ándá.
'Ah, or ákh, say.	'Akhadá,	'Akhiá
Baddh, bind.	Baddhadá.	Baddhá.
Bhaj, flee.	Bhajadá.	Bhajjá or bhajíá.
Bhij, wet.	Bhijadá.	Bhijjá. or bhinná.
Bhag, break.	Bhagadá.	Bhaggá or bhagjá.

* Or "wá" : the latter however is a Hindostani form.

<i>Root.</i>	<i>Pres. Participle.</i>	<i>Past. Participle:</i>
Bidh, pierce.	Biddhadá.	Biddhá. or biddhiá.
Chá, or chau, say.	Chaundá.	Cháíá.
Dhah, fall.	Dhahandá or dhahendá.	Dahiá.
De, give.	Dindá.	Dittá.
Dékh, look.	Dekhadá.	Ditthá or dekhíá.
Dho, wash.	Dhoundá.	Dhotá.
Gum, lose.	Gumadá.	Gumattá or gumíá.
Gá, sing.	Gáundá.	Gátá or gáviá.
Giddh, take.	Giddhadá.	Giddhá or giddhiá.
Guddh, knead.	Guddhadá.	Guddhá or guddhiá.
Ho, be	Hundá.	Hoiá.
Já, go.	Jándá or jaundá.	Gaiá.
Jíw, live.	Jindá.	Jitá.
Ján, know.	Jánadá.	Játá or jániá.
Jáo, be born.	Jáundá.	Jáiá.
Jadh, coire.	Jadhadá.	Jahiá or jadhíá
Kar, do.	Karandá or karendá.	Kariá, Kitá, Kíá or Kíná.
Kho, lose.	Khoundá.	Khotá or khoiá.
Khá, eat.	Kháundá.	Khadá or khaviá kháiá.
Khus, be spoiled.	Khusadá.	Khusiá or khutta.
Lah, obtain.	Lahandá.	Lahiá.
Lah, come down.	Lahandá.	Lahá or latthá.
Le, take.	Lindá or laindá.	Líá or littá.
Nath,, flee.	Nathadá.	Natthiá or nattha.
Nass, flee.	Nassadá.	Nassá or nassiá.
New, carry.	Níndá.	Nítá.
Pan, fall.	Paundá.	Paíá.
Pai, fall.	Paiadá.	Paviá.
Pí, drink.	Píndá.	Píá or pítá.
Pháth, be caught.	Pháthadá.	Phthá or pháthiá.
Rah, stay.	Rahandá.	Rahiá.
Ro, weep.	Rondá.	Roiá runná or rotá.
Riddh, cook.	Riddhadá.	Riddhá or riddhiá.
Ruddh, be employed.	Ruddhadá.	Ruddhá or ruddhiá.
Saláh, praise.	Saláhandá.	Salahiá.

<i>Root.</i>	<i>Pres. Participle.</i>	<i>Past. Participle.</i>
Siddh, aim.	Siddhadá.	Siddhá or siddhía.
So or sum, sleep.	Sondá or sumadá.	Suttá or sojá.
Thí, become.	Thíndá.	Thiá.
Wáh, plough.	Wáhíndá.	Wáhiá.
Wiáh, marry.	Wiáhíndá.	Wiáhiá.
Wanj, go.	Wendá or wanjadá.	Wiá or wanjíá.

It may be observed that the only irregularity in the *Játakí* verb is the formation of the two participles.

The irregularity of the present participle is generally caused by the introduction of an "n" to facilitate pronunciation.

The irregularity of the past participle often arises from its being derived from another form of the same verb. For instance, *dithá*, which is considered to be the past participle of *dekhaná* (to see), proceeds from *dizhaná*, an almost obsolete form.

Many verbs have two different roots and verbal nouns, though the signification of both is exactly the same e. g.—

Gunhaná	and	guddhaná, to knead.
Khelná	„	khedná, to play.
Munnaná	„	mundaná, to shave.
Jáoná	„	jamaná, to be born.

Causal verbs ending in "aná," form, as a general rule, their past participles in "áíá" or "atá," and occasionally in "áttá," e. g. —

Ganwáná,	forms	ganwáíá or ganwátá.
Mangáná,	„	mangáíá or mangátá.
Buláná,	„	buláíá or bulátá.
Kamáná,	„	kamáíá, kamátá or kamáttá.

Causal verbs ending in "oná," also take "otá" as the termination of their past participles, e. g. —

Kharoná,	forms	kharotá.
Buloná,	„	bulota.

APPENDIX.

The following is a short list of indeclinable words, such as adverbs, * prepositions, &c. Those which are commonly used in Hindostání are not inserted.

Abe, or be, O man ! the feminine is	Chánchak,	suddenly.
aní or ní.	Chaudhírán,	all around.
Agge,	Chhetí,	quickly.
Aggon,	Chit-put,	upside down.
Agle-wele,	Dánh,	} towards.
Aho,	Donh,	
Ainwen,	De,	} well done! happy!
Ajan,	Dhan,	
Aján,	Diháde,	} daily.
Anjan,	Dihárá,	
Ajehe,	E,	O !
Ayse,	Ede,	here.
Ake,	En,	and (a sindhí
Anjo-anj,		word).
Anusár,	Gad,	together.
Ar,	Ghat,	less.
Ate,	Haí,	} alas !
Atishay,	Hái,	
Bahún,	Hái-hái,	} yes.
Bahún,	Hán,	
Bájh,	Háne,	} now.
Bájhán,	Hun,	
Bháwen,	Huná,	} help !
Bí, also.	Háloí,	
Bich,	Haure,	slowly.
	Hathon,	moreover, besides.
Chah-pah,	Hat,	} again, once more.
Chat-pát,	Hat-kar,	

* Many adverbs, we may so call them, are formed by putting the substantive or adjective in the ablative or other case, omitting the governing prepositions or post positions. Others again are merely the roots, or the past conjunctive participles of verbs, used adverbially.

Hekánde,	together, in one place.	Jichir,	as long as.
Heth,	below.	Jithe,	wherever.
Her,	now, at present.	Jithe-kithe,	wheresoever.
Herkih,	but, now that.	Jithon,	from wherever.
Hir-phir,	{ again and again.	Jíwen,	as.
Phir-phir		Jíwen,	tíwen, in any manner.
Hor,	and.	Kadá,	{ when ?
Hor-wele,	at all times, at other times.	Kadh,	
		Kadhe,	{ near, close.
Huní,	just now.	Kan,	
Ijho,	lo ! behold !	Kane,	{ from, from near.
Iswal,	hither, on this side.	Kanon,	
		Kane-on,	{ for the sake of.
Ithe,	{ here.	Kanáhan,	
Ithán,		Káran,	{ how ?
Ithín,	{ hence.	Kán,	
Ithon,		Kíte,	{ to the left.
Iwen,	in this way, thus.	Kayse,	
Jab,	{ when.	Khabbe,	{ a common exple-
Jad,		Khan,	
Jad,			tive: it literally
Jad,			means "take "
Jadh,			or " having
Jede,			taken ".
Jadon,			what ?
Jadán,	{ whenever.	Kí,	{ how ? why ?
Ján,		Kíkar	
Jadahán,	{ as.	Kikkar,	{ a little.
Ján-ján,		Kikkaron,	
Jaise,	{ if.	Kínkar,	{ somewhere or
Je,		Kíwen,	
Jekar,	{ if agani.	Kichhu,	{ other.
Jo,		Kidáhin,	
Je-wat,	{ quickly.	Kit,	{ where ?
Jhab,		Kithe,	
Jhabde,	{ in the morning.	Kithán	{
Jhaláugh,			
Jhat-pat,	instantly.		

Kithon,	{ whence.	Oh,	alas ! oh ! (in grief or wonder).
Kiste,			
Kol,	near.	Orak,	at last.
Kolon,	from, from near.	Orár,	{ on this side
Lagolag,	successively, in close succession.	Urar,	
		Orawár,	
Leí,	for, for the sake of.	Ore, near.	
		Owen,	in that manner.
Lohrá	lohrá, alas ! alas !	Pahriá,	{ help !
Loriye,	it behoveth, (synonymous with the Hind, chachuye, and generally joined to the Infinitive as karan or karaná loriye).	Pahrá-pahrá,	
		Par,	but, perhaps.
		Pár,	across, on the other side.
		Pare,	far, away, e. g.
		Parere,	pare thi, begone !
		Parle pár,	beyond, afar.
Man,	{ perhaps.	Parle páse,	{ on that side.
Mán,		Parín,	
Mane,	in, in the midst.		the day before yesterday, or after tomorrow.
Mat,	possibly.		
Matán,	may it not be !	Parmáne,	according to.
Mathe,	above.	Phit,	curse !
Mech,	like, equal.	Puthián,	{ behind.
Mohre,	in front.	Puthon,	
Mur,	again.	Sabbate,	in every respect,
Múle,	{ altogether—literally “from the root”.		(literally, “than all”).
Mudhon,			
Nál,	with.	Sadá,	{ always.
Neth,	at last.	Sadán,	
Nere,	{ near, close.	Sajje,	to the right.
Nere,		Sán,	{ with, along with.
Nerau,		Sang,	
Nischay,	certainly.	Sudhí,	
Niwán,	below, at bottom.	Sudhán,	{ early, (in the morning.)
Oe,	ho !	Sawel,	

Shábas,	{	Bravo !	Tore,	even, though.	
Shábash,			Tulat,	instantly.	
Shál,	{	perhaps, it is to be	Unchhán,	on the top.	
Shálá,		hoped. (These	Uparand,	afterwards.	
		are Sindhí	Uswal,	that side.	
		words, and pos-	Uthe,	{	
		sibly may be	Uttád,		above.
		contractions.	Utton,	from above.	
		of the common	Uth,	{	
		Moslem excla-	Uthe,		
		mation, Mshal-	Uthan,		there.
		lah, Deo vo-	Utháín,		
		lente).	Uthon,	{	
			Utháon,		thence.
Tad,	{		Ve,		
Tadh,		then.	Wadh,	{	
Tadhe,		then, indeed.	Wadhík,		much, more.
Tán,	{	at that very time.	Wádhú,		
Tadáhán,			Wáhar,	without, outside.	
Tadahín,		such like.	Wahún,	without.	
Tayse,		on, upon, than,	Wal,	{	
Te,		from. Also	Wár,		towards.
		for ate, and.	Wal-wal,	again and again.	
Thán,		instead of.	Wángur,	like.	
Tikur,		until, unto.	Wat,	near, close.	
Tit,	{	there.	Warí,	again.	
Tithe,			Wari-warí,	again and again,	
Tithon,		thence.		repeatedly.	
Tichir,		so long.	Wich,	{	
Tode,		till, up to.	Vich,		in, inside, in the
Tori,				middle.	
Zor,		much, very, (used as "bahut ; " e. g. zor husu, "much beauty").			

ART. X.—*Brief Notes on certain Ancient Coins lately presented to or exhibited before the Bombay Branch of the Royal Asiatic Society.* By John Wilson, D. D. Honorary President of the Society.

At a meeting of the Society held on the 11th of May last, at which I had not the pleasure of being present, Dr. Buist exhibited to the members, according to the interesting notice published in the Bombay Times, what was called a *Bactrian coin** which he had picked up in the bázár, and of which the following description was given :—"It was not described either in the *Ariana Antiqua*, or in Prinsep's *Historical Researches*. On one side was the head of a king with a crown, wig, and beard, exactly resembling the head of the king (Darius Hystaspes) on the Behistun sculptures. On the opposite side was a well-marked figure, of very delicate proportions, leaning back on a chair—with wig and beard like the preceding. He seemed to hold forth a branch in his hand, his attitude being exactly like that of Britannia on the English coins of George III. with the branch, but without the drapery or shield; in place of a trident, he held a spear in his hand. This was surrounded by a Greek inscription not made out. The kings on the Behistun sculptures, and probably a considerable part of the others, wear head-dresses of similar character." Dr. Stevenson in a note to Dr. Buist, says of this coin, "Although I believe few, if any, such have been brought to light in India, similar Parthian coins, are not very uncommon in Europe. On consulting Eckhel (Part I. Vol. iii. Vindobonæ 1794, pp. 529 and 530), I find a coin described as belonging to the fifteenth of the Arsacidæ, which both in the emblems and inscription agrees with your coin. The image of the king's face, he says, is *modeste barbato diademate crispis crinibus*. I am inclined to think he wears a wig and not his own hair; and from the form of the beard, I should also think it false, just as in the images on the marbles lately dug up near Nineveh, to which the head on the coin in question bears a remarkable resemblance. Phraates IV. was a cotemporary of Augustus. The year is not mentioned on your coin, or the letters have been obliterated, but the month Dæsius, corresponding

* Plate, vii. Fig. A.

professor H. H. Wilson, and professor Lassen, who have confined their attention principally to the Bactrian, Indo-Grecian, Indo-Scythian, and ancient Hindu coins, illustrating the dynasties and succession of kings, of whom, independently of their testimony, we have but a slight knowledge. *Parthian* coins are numerous in the public museums of Europe, and even in some private collections, as that of Mr Kiss of Pesth, which I had an opportunity of examining, when passing through Hungary on my way to Britain in 1843. The finding of the coin in the Bombay Bázár is a curious circumstance; but it was there probably as a wanderer. Within the last nineteen years, I have procured in Bombay about a dozen of the same dynasty, to one or two of which, I shall have an opportunity of directing the attention of the Society. Some of them were presented to me by natives, and some of them by Dr. A. H. Leith.

2. The resemblance of the head on the obverse to that of Darius on the Behistun inscriptions, or to that of the marbles lately dug up at Nineveh, I consider but slight, though it is not altogether unworthy of notice. On both sides of the question of the artificialness or naturalness of the hair of the head or beard in this instance, something could be said, though it is a fact that the Parthian rulers, like the grandees of Assyria, did sometimes wear artificial beards.* Respecting the figure on the reverse, I am incline to differ from both Drs. Buist and Stevenson. It is, I conceive the well-known Grecian figure of Jupiter sitting holding the eagle, *Jupiter seminudus sedens, dextera extensa aquilam gerens, levis tenens hastam*. If the members will compare the coin with the reverse of a small silver coin of Alexander the Great† from my own collection, they will, I think, acquiesce in this opinion. The Parthian bow, which Dr. Stevenson substitutes for the eagle in this coin, appears very distinctly on some other Parthian coins. The real form of this instrument, to which the attention of the Society was lately directed by Dr. Buist, is well brought out in a silver coin of Arsaces Orodes, the fourteenth of the Arsacidæ, which I lay on the table.‡ It strikingly corroborates the opinion of Dr. Buist that the Parthian bow was not incurvated, but somewhat of the form of the Cadmean sigma, Σ. The inscription

* As this sheet goes through the press, a remarkable instance of this has been shown to me by my friend Mr. J. Smith, in a silver coin of one of the latter Arsacidan princes lately brought from Basrah, and belonging to Dr. Bremner. Plate vii. Fig. I.

† Plate vii. Fig. B.

‡ Plate vii. Fig. C.

on this coin of Orodes is, ΒΑΣΙΛΕΩΣ ΕΠΙΦΑΝΟΥ ΑΡΣΑΚΟΥ ΘΕΟΠΑΤΟΡΟΣ ΝΙΚΑΤΟΡΟΣ. The letters are made by line, and not partially dotted, like those of Dr. Buist's coin. They are free from misspellings, which not unfrequently occur in Parthian coins. Dr. Buist's has ΕΥΕΙΓΕΤΟΥ for ΕΥΕΡΓΕΤΟΥ. Mistakes of this kind show that the artists were not themselves Greeks, but imitators of Grecian art. How greatly they continued to degenerate in their representations of both letters and figures, is very evident in two specimens of Arsaces Vologeses, Arsaces XXVI, which I lay on the table.* In these, even the resemblance to Grecian workmanship is very slight. It is with difficulty that the dotted letters of one of them can be made out to be intended for ΒΑΣΙΛΕΩΣ ΒΑΣΙΛΕΩΝ. In the other, there are misspellings in almost every word of the inscription. It is worthy of notice that the imitations of Grecian art were more successful among the Bactrians and Indo-Grecians, and even Indo-Scythians and ancient Hindus, than among the latter Parthians.

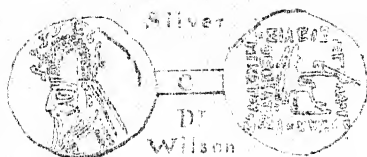
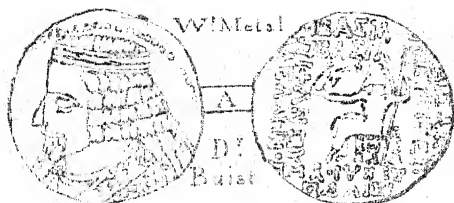
3. Dr. Stevenson, judging from Eckhel, thinks that Dr. Buist's coin may be that of Phraates IV. Some of the figures in Gessner correspond with this opinion. On the examination, however, of the figures in Vaillant, who has devoted much attention to the Bactrian coins in his "*Arsacidarum Imperium*," this identification must appear doubtful. The figure of Phraates IV, as given by that authority (p. 147), is very different. Dr. B's coin, judging from Vaillant's plates, most resembles the coins of Arsaces I. and Arsaces II.† The identification of the coins of particular kings of the Parthian dynasty, is not an easy matter, as we find on them merely titles and not names, and our historical fragments do not always enable us to identify these titles.

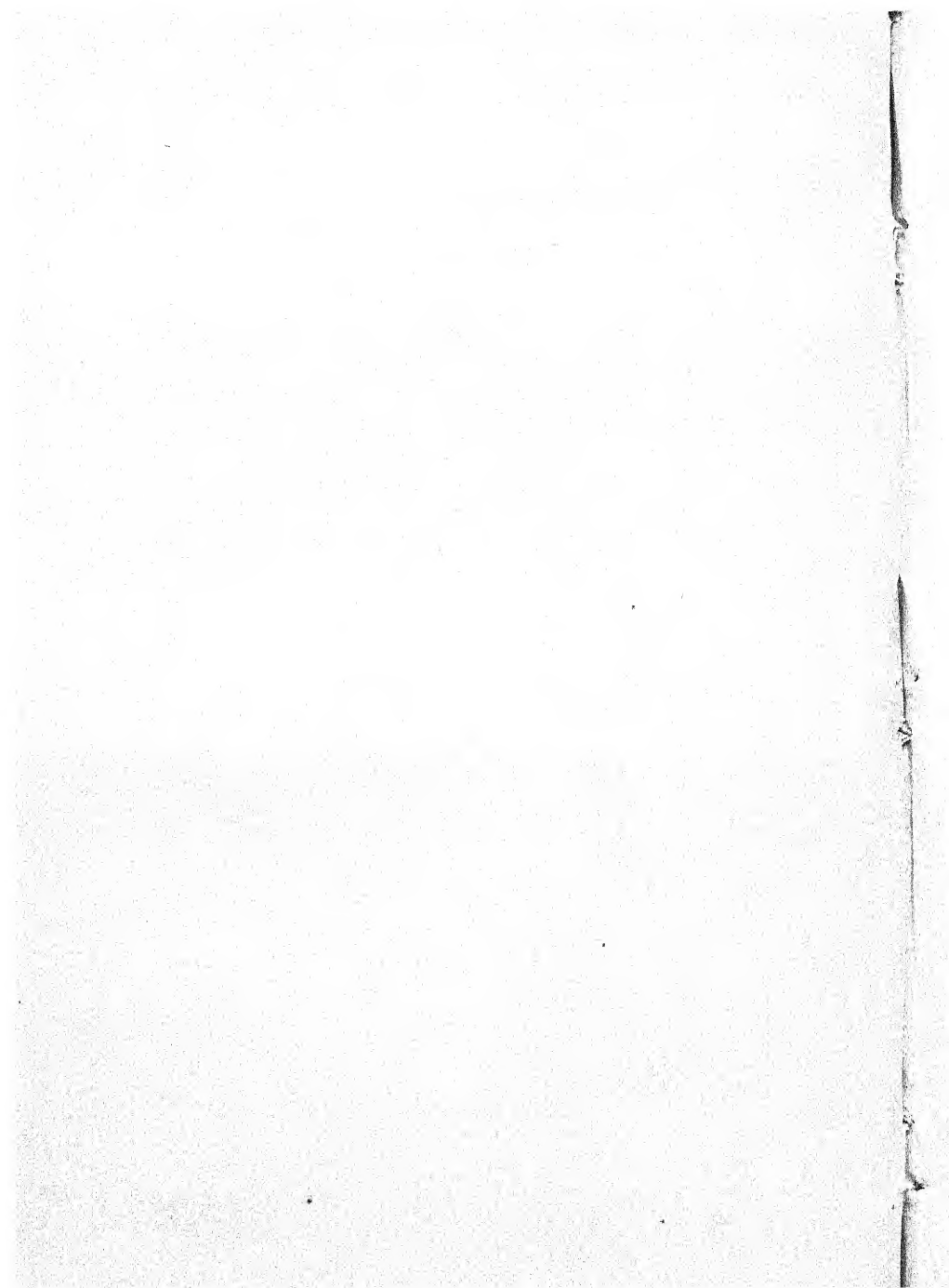
Leaving the subject of Parthian coins, let me now briefly direct the Society's attention to some specimens connected with dynasties more particularly associated with the countries contiguous to India, or forming its northern provinces. I refer especially to the more remarkable of a collection of coins made by Captain Christopher of the Indian Navy, during his late successful voyages of experiment and research on the Indus, and which his liberality enables me to present to the Society. In noticing these coins, I shall follow the arrangement of Professor Lassen in his able and interesting work, "*Zur Geschichte der Grieschischen und Indoskythischen*

* Plate vii. Figures D and E.

† Plate vii. Figures F and G.

Plate VII.





Passing on to "Coins with Grecian characters, the kings not Greek, but having no Barbarian titles," I find in Captain Christopher's collection nine of *Soter Megas*, of two or three types. They belong to a class which is exceedingly numerous not only in the Panjáb, where they were found, but in Afghanistán, where Mr. Masson procured two hundred and fifty seven specimens in three years. They have on the obverse generally a helmeted or coronated king with a nimbus, without any inscription; and on the reverse the figure of a man mounted on horseback, with the legend ΒΑΣΙΛΕΥΣ ΒΑΣΙΛΕΩΝ ΣΩΤΗΡ ΜΕΓΑΛΑΣ sometimes in a corrupted form. "The large number of these coins," says professor Lassen, "prove that this [nameless] king possessed an ample empire, and did not reign for a short time. He must have ruled in Kábul and a part of the Panjáb." The same distinguished Antiquarian and Orientalist says that "he must have belonged to a certain Scythian horde, which had for some time their abode in a country, where purely Greek and not native characters were adopted for the coins." He adds, "At an after period he perhaps used them; if indeed the coins with native legends which M. Mionnet assigns him, be really his." In one specimen now before us, there is the appearance of such a legend as that now referred to, but the letters are so indistinct that nothing can be made of them. Mr. Prinsep makes the nameless Soter Megas flourish about 70 years B. C. He must have been prior to the conquest of the Panjáb and Kábul by Vikramáditya, whose era, 56 before Christ, dates from a victory over the Scythians in the Panjáb.

Of the *Kadphises* group of Indo-Scythian coins, referrible to the time between the Christian era and the century following, there are seven specimens in Capt. Christopher's collection. It also furnishes ten of the *Kanerkí* group; fifteen of the *Indian Kanauj* dynasty; eleven coins which I have not yet been able to class, but of which something may be made; twenty-one coins which are much defaced; and one hundred and twenty-one with Arabic and Persian inscriptions. None of these series, I have found time sufficiently to examine; but, perhaps, I may be able to direct attention to some of them at a subsequent meeting of the Society, particularly if any peculiarities appear in them worthy of distinct notice. They form altogether a valuable accession to our Museum.*

* Mr. J. Macleod of the Sindh Customs has kindly put into my hands a collection of coins very similar to that now noticed.

ART. XI. — *Maráthi works composed by the Portuguese.*
By the Rev. J. Murray Mitchell.

It is well known that important works in the Native languages have been composed by Romish ecclesiastics in various parts of India. We may particularize the names of Hieronymo Xavier*, Roberto di Nobili, and Constantino J. Beschi. The first of these wrote various works in the

* He, of course, is not to be confounded with the great Francisco Xavier. He wrote *داستان مسیح* the *History of Christ*, *داستان سن پیدرو* the *History of Saint Peter*, and *آینه حق نما* *A Mirror shewing truth*. See a long and interesting account of the last work in Lee's edition of Martyn's *Controversial Tracts*.

See Asiatic Researches Vol. XIV for an account of the pretended Yajur Veda, written by Nobili in Sanskrit.

Mr. Ellis, who is the writer of the article now referred to, calls this imitation of the Vedas, "an instance of literary forgery or rather of religious imposition without parallel". Mr. Ellis doubtless means without parallel in point of boldness; for it is by no means remarkable in point of success. It was a complete misnomer to term the forgery a Veda; for in style, metre, and contents it differs as widely from the true Vedas, as the odes of Catullus from the laws of the XII Tables. It ought to be denominated an imitation of the Purānas. Apparently, it exists only in the Roman character, which, without a great array of diacritical marks (and they do not seem in this case to have been employed at all) is incapable of accurately expressing the sounds of the Sanskrit alphabet. Mr. Ellis remarks that the language is altered according to the Bengali pronunciation. But there are many errors in the orthography that cannot be referred to dialectic variety. The most remarkable of these is the frequent omission of aspirated sounds. Such errors as *bibranto* for *vibrante*, *ouddaron* for *uddharam*, *chiddon* for *siddham*, *brommo* for *brahma*, are very offensive to an ear accustomed to correct enunciation. Mr. Ellis has detected grammatical blunders in the Sanskrit. On the whole, this achievement of Nobili's, which, when it is first heard of, strikes one as something colossal, dwindles on careful examination into very ordinary dimensions. The work was published at Yverdon in 1778, under the title of *L' Ezour Vadam, ou anciens commentaires du Vedam, contenant l' exposition des opinions religieuses et philosophiques des Indiens*. It was republished at Paris in 1792. It imposed on Voltaire, and, what is more extraordinary, on Anquetil du Perron.

A work of easy reference to those who may wish for farther information regarding Nobili, is Mosheim's *Ecc. History* (Book IV. Cent. XVII. Sect. 1). See particularly the note by Dr. MacLaine, for a strong, but thoroughly just, censure on his conduct.

Roberto di Nobili died in 1656.

Of Beschi, a long and interesting account (as well as a portrait) is contained in the *Madras Journal of Literature and Science* Vol. XI p. 250—302. His writings are there enumerated, and copious extracts given from them. His poetical works were 6 in number, his prose writings 17. He died in 1742.

Persian language and attracted attention at the court of the Emperor Jahángír. Still more celebrated is Roberto di Nobili, whose attainments both in Sanskrit and Tamil seem to have been of a very high order ; while Father Beschi, if inferior to Nobili in his knowledge of Sanskrit, appears to have surpassed him in the singular power and flexibility of his Tamil style. Very little notice has yet been taken of the literary productions of Romish ecclesiastics in this quarter. Yet, when we consider the extent of the dominion which the Portuguese obtained in Western India, their zeal for the conversion of the Natives, and the former magnificence of what they esteemed almost a holy city—Goa, one would be prepared to find that important literary works had been undertaken by them with a view to the dissemination of Christianity. It is by no means improbable that a careful examination of the libraries at Goa might bring compositions to light, the existence of which is at present unknown. In the meantime, the following remarks may be useful as serving to introduce the investigation of a subject at once interesting and important.

Three works are now before me, written in the Maráthí language by the Portuguese. Two of them are deserving of little attention, but the remaining one is of much greater consequence. We shall commence with the most important.

The title page of the work in the edition before me runs as follows :

“Declaração novamente feita da muita Dolorosa Morte e Paixão do Nosso Senhor JESUS CHRISTO. Conforme a Escreveraõ os Quatro Evangelistas. Feita por hum Devoto Padre chamado FRANCISCO VAS DE GUIMARAENS. LISBOA, com licença da Real Meza, na officina de Domingos Carneiro. No anno de 1659. Foi reimprimido ao Senhor Antonio Gonsalves, Puranick Shatry. Bombaim, Iro de Janeiro de 1845.

The title page is followed by a *prospecto*, setting forth the desirableness of religious knowledge. It speaks of the work as *esta obra em versos chamada vulgarmente Purano, composto em lingua do Paiz*. (*a work in verse, commonly called a Purana, composed in the language of the country*).

After a page of Errata, we have next four pages with no more explanation of their purport than the heading *Sahe o representante e diz (the actor comes forth and says)*. These are manifestly portions of some Portuguese religious drama on the sufferings of Christ,—Caiaphas, Rabbi Abraham, a spy, Judas, and the Devil, being introduced as speakers.

It is after this preliminary matter, which is all written in the Portuguese language, that the work properly commences. With the exception of the Portuguese heading to each chapter, of *capítulo*, it is written throughout in Maráthí. It appears to have no proper Maráthí title; the first chapter is merely headed by the words JESUS MARIA JOSEPH.

The original Lisbon edition of 1659 would seem to be entirely out of print. The Bombay reprint itself is said to have been executed from a manuscript copy, and to that fact we may probably ascribe the numerous typographical errors which disfigure this edition. The work is highly popular among the Maráthí-speaking Roman Catholics, and is generally mentioned by them under the name of the *Purána*. Such too is the name given to it in the passage quoted above from the *Prospecto*.

Our Purana (so to call it) is a poetical work,—that is to say, it is intended to be metrical throughout. It runs in stanzas of four lines each, which are constructed, although loosely, in imitation of the *oṛí* measure of the Maráthí poets. It contains two passages which, although the measure scarcely differs perceptibly from that employed in the rest of the work, are intended to possess a loftier poetical character, similar to that of the lyric fragments often inserted in European poems, and sometimes in Maráthí compositions. The entire poem is composed in 36 *cantthá* (probably *kathá*), which are accompanied with the Portuguese headings of *capítulo* or *chapter*. These 36 chapters or *cántos* extend to the large number of 16,000 lines, so that in point of magnitude it surpasses the most celebrated Epic poems of Europe.

The work is written in the Roman character. An eager controversy has been maintained on the question of the desirableness of issuing vernacular Indian works in the Roman character; and again, the rival merits of the Jonesian and Gilchristian systems of expressing Indian sounds have been no less warmly discussed. It is entirely foreign to the object of this paper to pronounce an opinion on these disputed points; but it is interesting to note the practical solution which the Portuguese have afforded of both of them. They have from the first employed the Roman character to express the sounds of the Maráthí language, and they have given the Roman letters simply those powers which they possess in Portuguese. Unhappily, however, partly from carelessness, and partly from their ignorance of the purer forms of Maráthí, they have conveyed the language in a shape exceedingly repulsive to those

who are familiar with it only as expressed in Deva Nágari characters, the minute and beautiful precision of which forms a singular contrast with the confusion of sounds that reigns in the Romanized Maráthí of Father Guimaraens and his successors. The work before us opens thus: CANTHA PAÍLY. *Caixy Virge Maria Saibina saumbaully santa Annachê udrim chocata Adãoche papavinchun, Parmessorache curpexim.* The above is the title in prose. The poem itself commences thus.

Christãovando aica tumim,
Equê chitim canttha Saibinimchy.
Caixy sambaully Santa Annâche udrim
Parmessorâche curpexim.

That is to say—

Christian people, hear ye
With one mind the story of the Lady [the Virgin]
How she was conceived in womb of Saint Anne
By the grace of the Supreme.

In these four lines of short verse there are several inaccuracies. The letter *d* is wrongly inserted in *christaovando*; *h* is omitted in *tumim* and *sambaully*; *t* is omitted in *chitim*, and wrongly inserted in *canttha*; *n* is also wrongly inserted in *canttha*; *Parmessor* for परमेश्वर is low, and not correct even in that view; *curpexim* is a scarcely allowable form for कृपेसी. It is probable that Father Guimaraens, even had he been acquainted with the purer forms of Maráthí might have preferred writing in a more vulgar dialect, in order to accommodate himself to the wants of the Portuguese Christians. But the language is blamably low; it is not merely popular,—it is corrupt. Such forms as *deca* for देखा (*dekha*) (corresponding to the Hindustání *dekho*, see), *baga* for बघा (*baghá*) *ghetala* for घेतला (*ghetalá*), in which the aspirated consonants are softened into the simple ones, abound in every page. Occasionally an aspirate is wrongly inserted, as *dhole* for डोळे (*d'óle*). In *dhuca* for दुख (*dukhu*) we have an instance of both these faults. Still worse is such a form as *rel* for राहिल (*râhíl*), or *del* for देईल (*deíl*), the etymology of the word entirely disappearing. We have no distinction between long and short vowels. But that is not all. Vowels are confounded. We have *quelans* for केलेंस (*kelès*), *ayssam* for असें (ऐसें)

asé or *aisé*). We have *auram* for एवढें (*evad'hé*). Consonants are confounded. The letter *r* is made to do service for र, ड, and ढ. There is no distinction between dentals and cerebrals. Peculiar forms abound, as *bapazun* for *bápáne*, *boltan* for *boltát*. The termination *xim* (खी) is used with remarkable freedom. The idiom of the Maráthí language is sometimes violated, particularly in the frequently recurring expression *tyazun botalam* (i. e. *tyáne bolalé*) instead of *to bolalá*.—It does not seem necessary to institute a lengthened examination of the dialect used in this work. Had its variations from pure Maráthí been regulated by any general laws, it would have been well to investigate these; but no such laws are discoverable, and in consistencies every where abound. The language is neither more nor less than a debased Maráthí, with a considerable admixture of Gujarátí and Hindustání. It is very closely allied to the dialect spoken on the island of Salsette near Bombay. In this part of W. India, the Roman Catholic religion made exceedingly little impression on the higher castes of Hindus; the converts were almost exclusively from the poorer classes of cultivators and fishermen, and their dialect of Maráthí has apparently been adopted by their religious teachers without any effort being made to elevate or systematize it. Education among the Maráthí-speaking Ramanists of our Presidency has been almost wholly neglected, and hence no doubt arose the necessity of *writing down* to their capacity. Altogether, the work constitutes quite a study for those who are acquainted only with the Maráthí of the higher castes, or that which is employed in the popular Maráthí poetry of the Hindus.

To pass however to a point of higher moment. We cannot ascribe to the poem before us any great literary merit. The general scope of the work seems to be the same as that of one of Father Beschi's most celebrated writings called *Tembavani*, or the *Unfading Garland*, the professed design of which was to present the great verities of the Christian religion in a poetical style, accommodated to Native taste. The *Tembavani*, when tried by the canons of European criticism, must be condemned as full of what Milton would call

—swelling epithets laid thick

Like varnish on a harlot's cheek;—

but had these meretricious ornaments been confined to mere style, and not affected the very essence of the history which the writer professed to record, this might, in the peculiar circumstances of the case, have passed

for an excellence. The following is a specimen of the style of the Tembavani. "Like as the great sea surrounds the golden world, so the beauty of the wide Moat, varying its bright waves and surrounding the walls [of Jerusalem*] which shone like a multitude of the solar rays, rose like a mountain to the water of the clouds and pierced the sky.—This extensive Moat at the foot of the heaven-reaching walls, seemed like a silver shackle to detain the beauteous city on the sea-girt earth; for fear it should esteem the earth an unsuitable habitation, and ascend to heaven as a more appropriate place. This Moat was deep as the deeply rooted affection of the great; the green weeds in it played on its surface, unstable as the affection of the mean; and the lotus, outshone by the beauty of the damsels, could not stay within the city, but here opened its tender leaves and breathed its fragrance." Language of this kind will remind the Oriental student of the excessive polish of Kálidása; but the above is still more lavishly adorned than any production of that celebrated poet; and it rather approaches to the swell and glitter of the later Persian, than the chaster beauties of any of the classical Indian writers.

The Maráthí work now before us is of much humbler pretensions than the celebrated poem of Beschi. The style is in general bare and unadorned; and the author was evidently unfitted for "the flight of Pegasean wing." It is not often that he attempts to be highly poetical, nor is he very successful when he does attempt it. For example, in the chapter which commemorates the event which in the traditions of the Romish Communion is called the Assumption of the Virgin,—a subject which to a Romanist would be suggestive of a certain kind of elevated thought, and which has in fact animated the pencil of some of the great Italian masters,—he thus writes:†

Sagium hounxim Saibina
 Hulassa carum lagalê Deuduta,
 Any asguê Santamchê giu turuta
 Pomuarê gaüm lagalê.

Vazahum lagalê santossaxim,
 Asguê gaum lagalê hulassaxim,
 Varnum lagalê hauxexim
 Saibinilâ.

* The reader will observe that this *Moat* is an imaginary thing altogether.

† We print all the extracts we make, *verbatim et literatim*.

Deuduta bolum lagalê,
 Conxy hy aury sarupa hiâ garê,
 Dhon Nacatam tichê dholê
 Distan.

Tichê Gal Motiamchê,
 Tichê Hontha Pomvamlamchê,
 Tichê Quensa Souarnamchê
 Tichê Hatâ chocathê Rupîachê.

Câ Sarupa ticham Rupa,
 Nahim suarguim any dunin conalâ,
 Amachian nahim bagauê tilâ,
 Manussa assun amam gaira diste Savai.

(*Cap. xxxvi. 30-34.*)

That is,—

Our Lady having become alive,
 The angels of God began to exult,
 And all the souls of the saints speedily
 Hymns of praise began to sing.

They began to shout with joy,
 All began to sing with exultation,
 They began to celebrate with delight
 Our Lady.

The angels of God began to say :
 " How beautiful is she at this hour !
 Two stars her eyes
 Appear.

" Her cheeks are of pearl,
 Her lips of coral,
 Her locks of gold,
 Her hands of pure silver.

" How beautiful her appearance ! [*Quam formosa ejus forma*]
 None in heaven or the world has such ;
 We cannot look upon her,
 Though a human being, she appears quite different from us."

The two passages that were formerly referred to as being of a more strictly lyric character, are supposed to be sung by the Virgin beside the cradle of her child. They are constructed on the model of a Native

ग़ज़ल or lullaby. In point of mere artistic execution, some portions of these are very passable; they are not destitute of a kind of naturalness and sweetness. But unhappily, they are no less characterized by a freedom, or what to many would appear an irreverent handling of a deeply serious subject, that renders it difficult to quote largely from them. The first verse is as follows;

Jesus mangiâ mogalâ
 Casatha caru' aylâs
 Dunin Suarâga thaquillâs
 Cam rartês Balâ

That is,—

Jesus, my child,
 Hast thou come to suffer distress
 On earth, having forsaken heaven?
 Why weep'st, my son?

The following is quite an echo of a Native ग़ज़ल.

Zô, zô, Mogalâ;
 Ninza gue, Balâ;
 Ningexim, Putrá, tulâ
 Vissar pârel.

Hush, hush, my child,
 Slumber, my babe;
 In thy sleep, my son,
 Oblivion will befall.

In addition to the two passages now referred to, there are a few scattered throughout the work, in which the author rises above the level of a purely narrative style, and draws largely on the resources of imagination. For example, after the crucifixion is described, the Virgin is represented as giving vent to her emotions in a strain of passionate complaint which is extended into twenty four stanzas. Considering the peculiar solemnity of its subject, we must pass over this suggestive passage* without either criticism or quotation. We may merely note, that it possesses some degree of poetic merit. In several instances, indeed, the

* This passage is interesting from the fact that it particularly is sung in some Roman Catholic Churches in Bombay and Salsette on Maundy Thursday and Good Friday. It is also sung in families.

language is remarkably similar to that of a well-known hymn of Paul Gerhardt's which commences thus:

O Haupt voll Blut und Wunden,
Voll Schmerz und voller Hohn.

It is of importance to the appreciation of the real character of the work to remember that it does contain passages of this complexion, and that our author is occasionally not a mere metrical historian, but a poet, an inventor. It must be remembered at the same time, however, that the production is in a great measure free from those meretricious ornaments which are so offensively prominent in the work of Beschi, and from those adulterations which Hieronymo Xavier has industriously mingled in his histories both of Christ and Saint Peter. Our author does not appear consciously to have tampered with facts in order to accommodate them to Native prejudice. He uses (whether judiciously or not, we do not at this moment inquire) what he claims as a poet's privilege to represent as actually uttered those sentiments which he believes to befit the occasion, and to have occupied the mind of the parties introduced,—but there he stops. In point of moral intention, then, our author will rise as far above the celebrated men now referred to, as in point of intellectual power he must be admitted to fall below them. His intention evidently was to versify in a popular style without any great pretension either to elegance of diction, or critical accuracy of metre, some of the most prominent facts recorded either in Scripture or in the traditions of the Roman Catholic communion; and he would seem on the whole to have honestly discharged the duty which he had thus assigned himself. See, however, *infra*, for the limitations with which this acquittal must be taken.

The work before us possesses exceeding interest when contemplated in its theological aspect; but as any thing in the form of polemical discussion would be deemed unsuitable to the pages of our Journal, I shall studiously avoid entering on the subject, and shall consider the production only in a literary and historical point of view. The remarks which have been already made, may perhaps suffice in regard to its literary character. As an historical question, it is very important to inquire into the character and extent of the religious instruction communicated by the Portuguese ecclesiastics to the natives of Western India. How was the Christian system brought into contact with Hinduism? how were

converts gained? how were they trained? and what has contributed to form that peculiar character and phase of society by which the Native Portuguese in Western India are so specifically distinguished? Questions of this kind come fairly within the province of our Society; and on such questions the work of Father Guimaraens throws considerable light.

In the economy of Protestant Missions to the heathen, a very prominent place has always been assigned to translations of the Christian Scriptures into the vernacular languages of the country. The place thus assigned among Protestants to the Scriptures, may be said to be held by the work now before us among the Maráthi speaking Portuguese of W. India. It is exceedingly interesting to note what representation of the Christian system was afforded to the inhabitants of the Maráthá country by the Romish ecclesiastics. We may learn a good deal on this subject from the mere headings of the chapters of the work. These are as follows:

I. How the Virgin Mary, our Lady (Saibina), was conceived in the womb of saint Anne, pure from the sin of Adam, by the grace of God.

II. How the Virgin Mary was born of the womb of saint Anne into the world.

III. How saint Anne put the Lady Virgin Mary at the age of three years, in the Temple.

IV. How the Lady Virgin Mary married saint Joseph.

V. How our Lord (Suamim) Jesus Christ was conceived in the womb of the Virgin Mary by the grace of the Holy Spirit.

VI. How the Lady Virgin Mary went to visit saint Isabel.

VII. How our Lord Jesus Christ was born of the Virgin Mary in the fields of Embelem.

CRADLE SONG.

*VIII. How our Lord became baptized * (bautizar) on the eighth day, and received the name Jesus, as the angels had said.*

CRADLE SONG.

IX. How three kings of the world came to visit the child Jesus in the fields of Embelem the third day.

* Meaning circumcised.

X. *How our Lady Virgin Mary the fortieth day went with her son to the temple of Jerusalem.*

XI. *How the child Jesus went to a city of Egypt with his mother and saint Joseph.*

XII. *How the child Jesus was lost from the company of his mother in the city of Jerusalem at twelve years.*

XIII. *How our Lord Jesus, six days before his death, went to die on account of sinners in the city of Jerusalem, and what besides there happened.*

XIV. *How our Lord Jesus Christ remained with his flesh and blood in the Host, viz. the most holy sacrament : and washed the feet of his disciples on the night on which he fell into the hands of his enemies.*

XV. *How the Lord Jesus, having ended supper, took three Apostles with him and went to the garden of Olivet to pray to God the Father.*

XVI. *How our Lord Jesus fell into the hands of the Jews from his desire to die for sinners.*

XVII. *How the Jews took the Lord Jesus to the four houses of Annas, Caiphas, Pilate, and Herod, to judge him.*

XVIII. *How the Jews bound our Lord to a pillar and struck him on the body five thousand, four hundred and seventy five blows with their hands.*

XIX. *How the Jews put a crown of thorns on the head of our Lord.*

XX. *How Pilate sent away our Lord and gave him to the Jews to crucify him.*

XXI. *How the Jews took our Lord to Mount Calvary, laying the cross upon him, in company with thieves.*

XXII. *How the Jews crucified the Lord Jesus.*

XXIII. *How our Lord spoke seven words on the cross, and forgave his enemies with love, and died.*

XXIV. *How Joseph and Nicodemus took the body of the Lord from the cross, and gave it to our Lady, and what else happened.*

XXV. *How soldiers were appointed over the tomb of our Lord : his lamentation, and the trials experienced at the hands of the Jews.*

XXVI. *How the Jews appointed the soldiers to keep the body of the Lord Jesus, and how his soul went down to Limbo.*

XXVII. *How our Lord came out from hell and delivered the souls of saints with him, and became alive the third day.*

XXVIII. *How our Lord went to meet his mother, and took with him the souls of the saints.*

XXIX. *How our Lord met saint Mary Magdalene and the Apostles.*

XXX. *How the Jews gave money and made it be said that the disciples of the Lord had stolen away his body, and made it be denied that he had become alive.*

XXXI. *How our Lord Jesus Christ ascended to heaven on the fortieth day.*

XXXII. *How God the Holy Spirit put tongues of fire on the heads of the Apostles.*

XXXIII. *The most holy Trinity.*

XXXIV. *The most holy Sacrament.*

XXXV. *How the Lady Virgin Mary died.*

XXXVI. *How the Lady Virgin Mary became alive the third day.*

The thoughtful reader will have his attention aroused by various things in the headings of the chapters as above given. The omissions are remarkable. The ministry of John the Baptist, the baptism of Christ by him, the temptation, the sermon on the mount, the transfiguration, the miracles of Christ, are not referred to in these titles. Very extraordinary is the sudden leap from events belonging to the twelfth year of Christ's life, to those which preceded his death by only six days. It will be seen at a glance that many of the chapters must have been drawn up from tradition, inasmuch as they discuss matters regarding which the Scriptures are wholly silent. The prominent place given to the Virgin, and the extraordinary nature of the history assigned her in the last chapter, will also claim attention. Two chapters in the work are purely doctrinal, and the two points selected are the doctrines of the Trinity, and the "Sacrament," that is, the Eucharist.

Such then is the representation of the Evangelic Narrative and the Christian system, which the Portuguese ecclesiastics exhibited to the inhabitants of the Maráthá country.

Interwoven with the Narrative, we have many advices and warnings, and various allusions to practices existing among the Portuguese Christians, which are interesting on many accounts.

The following is a fair specimen of the mode in which the Christians are exhorted throughout the work to obedience towards the institutions of the Church :

Ayquili vartâ Missachi
Cam bara' cartê amanchê gargê
Tiato Parmessor Sarau detê
Tumy' Missa aycâ Parmessor paulil

Equê nagrana hotê don dossata
Equa Missa ayquê sadam
Bizâ naixê carita Missachi parua
Bagâ tialâ ca vichlam.

Dogauay sadam zata hassata pârdê
Eque dissa guelê Ranana
Tae' bagâ câ vichalam tianam
Aycun hoal hayran.

Ranan paun zailâ hotia nau gariâ
Thepa guimacham hotam
Zaulam dhaum lêgalim tadanam,
Vinza Uarâ gurguratha anim metha parlam

Equâ equâ Vinza zalcali zorâxim
Gôrgâratha motha zailâ
Abauarxim Ayssâ bol aiqilâ
Mar mar turuta zo Missa aique nay,

Tiâ garê vinza parlî giavar
Missa naxê aycata tiachî quelî racar
Magatun Vinza zalcali tarî
Boly bigi aiqily bary'

Marum noco zo Missa aycatê
Bacassa tialâ cam cuxy cartê
Parmessorâchi anim manitê
Sudecharaxim.

(*Cap. x. 76, 78-83.*)

Which is in English thus,

Hearing the repetition of the Mass
What good it procures in our necessity,

On that account the Lord gives all ;
Hear the Mass, and the Lord will bless you.

In one city there lived two friends ;
One of them heard the Mass regularly,
The other cared nothing for the Mass ;
See what befel this man.

Both of them were wont to go out to hunt ;
One day they went to the jungle ;
On that occasion see what happened to them,
When you hear it you will be amazed.

Three hours had passed since they arrived in the jungle,
It was the season of summer,
Clouds then began to fly,
Lightning, wind, thunder, and pitch-darkness came on.

Flash after flash blazed brightly ;
The thunder became terrible,
From on high then this sound was heard,
“ Kill, kill quickly him who hears not the Mass.”

That moment the lightning struck,
Him who heard not the Mass it reduced to ashes ;
Thereafter the lightning again flashed,
But a loud voice was heard crying,

“ Kill not the man who hears the Mass ;
Spare him, in as much as he performs the will
Of God, and obeys it
With propriety.”

Passages of the following character are very numerous. They shew that Heathen rites still prevailed to a great extent among the Portuguese flocks.

Noco carum darama zoxiamnam
Any henduamchê bamanânam
Cara ge quelam Santa Aannâzun
Bicariamnam any deulanam.

(i. 94.)

That is,

Spend not your money on Jyoshis (astrologers),
And on the Bamans (i. e. Brahmans) of the Hindus ;
Give it, as Saint Anne did,
To the poor and the churches.

Or again,

Quetî Christão assunxim,
Nahim caritã Parmessoráchia riti,
Anim âpulê gari cartan brantî,
Saitanachiã.

Zadaua' vitan tianchiã bailã,
Sathiã cârtan âpulê garim,
Anim murâda brântî,
Hendu'ache gattî.

Tarî manitan Saitanalã,
Anim patissã detan tialã,
Lâgeto lencram netan deul'na,
Bigi'ana thamquaulã.

Any' nahim sadavita tem naum,
Gem deulan detan Padri,
Garân detan bizam târi,
Cam nahim pârita xeastrâchî bolî.

Aulâdito cartan rozê,
Henduamchê anim parcâr bigê,
Anim nahim mangata gem paigê,
Parmessorâpâr.

(VIII. 84—89)

That is to say,—

How many, although Christians,
Perform not the worship of God,
But in their houses practise delusions
Of devils.

When their women bring forth,
They propitiate Satvái * in their houses,
And do many delusions
Like the Hindus.

* Satvái is the goddess who presides over child birth.

They pay respect to the devils,
 And supply them with offerings.
 If their children are sick, they take them to the temples
 To lay them down.

And they do not call them by the name
 Which the Padris give in the church ;
 At home they give another name,
 Because they regard not the words of scripture.

For offspring they perform fasts,
 And other rites of the Hindus ;
 Nor do they ask, what they require,
 Of God.

It is of much importance to note the position which the Virgin Mary occupies in this work. Her name and attributes are very frequently introduced. She holds, perhaps, on the whole the most prominent place in the religious system here propounded. We read thus, for example:

S. Agostinho boltê aixê sabadim,
 Suamiam Jesus Christaxim bolvê nahim ;
 Gem bolavacham axel bolauam Maulixim,
 Cam ty aiquel caclutixim.

(xxxvi. 236)

That is to say :

Saint Augustine uses these words,
 Do not speak to the Lord Jesus Christ ;
 What is to be said, say to his Mother,
 For she will hear compassionately.

Quotations of a similar import, although expressed in a form somewhat less startling, might be multiplied to any extent. Whatever measure of talent Father Guimaraens possessed, he has exerted it to the utmost in celebrating the greatness of her whom he styles *Rany Suargachy ani dunichy* (*the Queen of Heaven and Earth.*)

Salamão Ragiazun âpulê Maulilâ,
 Quelam sarcam sucassan bâissavalâ ;
 Suamim Jesus Ragiamchê Ragê,
 Caixy Mauly dunina thevitê.

Zaem hoty Cur tiamchy,
 Taem nely Maulichy ;
 Cã urmata Putrachy,
 Manavã ápulê gaty.

(xxxvi. 154, 155)

That is,

King Solomon for his Mother
 Made similar throne to sit upon ;
 The Lord Jesus is King of kings, —
 How should he keep his mother in the world ?

Where his own body was,
 There he took his Mother's ;
 For it is the honour of the Son
 That she be regarded like himself.

What are we to make of the following passage ? It is not very plain whether it is intended as a mere play on the name of the Virgin, or propounded as a genuine fact in etymology. If the latter, it would prove that the study of Hebrew did not flourish among the Portuguese priests in India of the 17th century.

Maria latimchê baxê dariã,
 Tiato David boltê Saibinixim,
 Tuzã panim uncha mothê chozazim
 Suamiamchê curpexim.

(xi. 93.)

That is,

Mary (*Maria*) means in the Latin language *Seas*,
 Therefore David says to our Lady,
 Thou art of the first water, marvellously,
 By the grace of the Lord.

Throughout all the work, strange narratives are introduced in explanation or confirmation of the duties prescribed. Some of them seem of purely Indian birth; but on the whole these are sparingly employed, — more so by far than we might have anticipated from the number of the ever recurring prodigies which, according to Portuguese belief, attended

the introduction of their religion into India. Let the reader consult the life of Francisco Xavier as written by Father Dominic Bohours, and he will find miracles of the most extraordinary kind ascribed to the Saint; miraculous agency, in fact, would seem to have constituted the normal state of life to "the glorious father Saint Francis," and submission to the laws that usually bind humanity, rather an exceptional case. Our author, however, has comparatively little of the marvellous in his statements of events in India. Still it occurs. More frequently occurs the marvellous in connexion with distant times and places. The following is one of the most extraordinary of the prodigies I have noticed (The subjoined is a close translation; but to save space, we henceforth omit the Maráthí):

Christian people, do you believe
That the Lord Jesus is in the Host?
If you do not believe it, you shall go to hell,
There you shall remain with devils.

Hear a wondrous proof of the most holy Sacrament.
Now two only shall be told you;
A hundred thousand have happened in the world,
But by these two all becomes plain.

You know about Saint Antony;
He was teaching in a town,
And there he began to say to the people
The body of the Lord is certainly in the Host.

In that place were many Jews;
They began to say to Saint Antony:
"We do not receive your saying
With trust.

"You say your God is
In the host; we acknowledge it not.
Shew us immediately
A proof."

Saint Antony spoke to the Jews:
"What sort of proof do you wish to see?
Whatever shall seem good to you,
That shall you see."

The Jews spoke to saint Antony :
“ Seven days hence bring your God
In this place, as you say, to convince us,
And exhibit the truth of your God.”

Saint Antony said to the Jews :
“ Your pleasure be done ;
You shall see in seven days
What I spoke with truth.”

The Jews went to Saint Antony ;
An ass was shut up in a place ;
To him wisp nor water for seven days
Was given ; he was kept fasting.

The seven days having passed,
Many Jews collected with triumph ;
They began to make a fool of Saint Antony,
See, Christian people, what happened then !

Saint Antony on the seventh day collected
Many Christian Padris to go to that place ;
He took the Lord in his hands,
And brought him near the Jews.

Saint Antony having gone with the Host
In which is our Lord,
Behold what then took place,
Receive it with trust.

The Jews had made a heap of grass
In another place to eat,
They put a great vessel of water
In that place.

The house in which the ass was shut up
They opened the door of it.
He had been in hunger and thirst for seven days,
See what that ass did.

The ass, having got free,
Looked neither at wisp nor water,
Straight he went to saint Antony,
For in his hand was the Lord.

There the ass knelt down,
And laid his head on the ground in the sight of all.

Thereupon the Jews were thunderstruck,
When they beheld the wonder.

Saint Antony began to speak to the Jews,
“ Still are you wicked in your hearts ?
A brute beast has disregarded hunger,
He has come to reverence my God.”

Then the Jews began to confess,
And to saint Antony they spoke :
“ We become christians by our own choice,
And receive the word of God.

Saint Antony took the Jews
With him all, immediately ;
And dismissed the ass in the sight of all :
“ Go, eat and drink to your content”.

Christian people, have you heard the tale?
A brute beast knew the Lord ;
And you who are men, do not know
Him ?

Know that saint Antony was a Frank,—
Portugal was his abode ;
There this matter took place ;
The world beheld it.

(xxxiv. 158—177.)

This is followed by another story, certainly no less marvellous, of the Host once becoming *gitam massa*, (*living flesh*) and assuming the actual appearance of the Being whose presence in it Father Guimaraens is so desirous of establishing. Whether this is one of the acknowledged legends of the Roman Catholic church, I am scarcely aware ; most probably it is, as certainly is the one touching Saint Antony and the ass, which we have just quoted.

Throughout the entire work, there is an absence of argument ; or at least, a strong disposition rather to rely on miraculous evidence. Thus, having spoken of the punishment of sin in the other world, our author, anticipating objections, meets them in the following way.

Foolish people say in their heart,
“After death there is no suffering.”

You will see that, in another world,
Christian people !

He who determines so in his heart,
Would determine that God is not in heaven ;
For he pays no regard to his doing,
And he cares not for his greatness.

Know ye, Christian people,
Just as a king does in his dominions,
He gives the good what their deeds demand,
The wicked he casts in the prison.

For these wicked people God shewed
In the kingdom of England (*Inglatera*)
In the country of Ireland (*Hibernia*)
To Saint Patrick a certain place.

In that place God shewed
All the sufferings of the wicked.
Saint Patrick had taken along with him
All the Christians who were disobedient.

Beholding with their own eyes in that place
The souls of relatives and friends,
Exceedingly distressed, they began to say :
"What fools were we" !

All the people believed
What they saw in that place ;
One to another they spoke,
"Our God is true."

(v. 106—111.)

It is interesting to see how the Portuguese ecclesiastics dealt with the matter of images. Here is the sentiment of our author on the subject :

Should you ask, why Christian people make
In the world images of God,
Of the Virgin Mary, and the saints ?
It is that we may keep them in remembrance and love.

Even as you keep in your house
Any object belonging to a friend,

And by means of it remember him
Continually :

Just so, the Church for our good
Causes images to be made, that remembrance may be,
And that in our souls we may enjoy
The grace of God.

The very grave offence which Beschi committed in his Tembavani in altering the facts of Christianity in order to accommodate them to Native prejudice, has been above referred to, as well as the pleasing circumstance that our author is comparatively free from such unchristian conduct. Occasionally a blamable anxiety to accommodate the facts which he relates to the prepossessions of the Hindus is discernible. Thus he has not the slightest hesitation in declaring that the wise men from the East were Hindus.

O Hindus, blessed are ye,
For to day kings of your race,
Know ye, came with grace
To visit God the Son.

All castes and races,
Know ye now, were left ;
Love was shown to the Hindus,
And there was too remembrance of others.

These three kings of Hindu race,
To day will be happy in their souls,
Because them the Lord in grace
Brought to meet him.

(ix. 3, 4, 6.)

Although however we see but little of a tampering with grand Christian verities or facts to render them more palatable to Native taste, we yet note in Father Guimaraens a fault not greatly dissimilar, which does not admit of excuse. He has altered the words of scripture in certain cases, so as to make them express sentiments widely different from those that are contained in the original. Thus the salutation of the Angel to Mary is expanded into 100 lines—and it is worse than diluted—it is travestied. The words of aged Simeon—so exquisitely poetical no less than ardently devout,—could not of course be altered without being injur-

ed, and accordingly we have them reproduced in doggrel; but that is an insignificant matter, compared with the daring interpolation of such sentiments as these:

The darkness of our sins
Dispel, and pardon our transgressions :
Ask heaven for our souls,
O Lady.

In thy hand are all things,
Heaven and Earth. On us,
O Lady, look with favour ;
Teach us in thy child's way.

(x. 36, 37)

These extracts will suffice to give an idea of this remarkable book.

There is still one interesting inquiry on which the work of Father Guimaraens may throw some light. In the paper on the "Story of Tukáráma," with which this volume of our journal commences, reference is made to the fact that in the later legends of the Maráthi people there are elements that must be extraneous, and probably Christian, in their origin. In that paper the question of Portuguese influence is noticed at some length; and the conclusion arrived at, is, that there is at least a probability that the later Marathi legends have been in part moulded after Christian ideas derived from the Portuguese of Goa, Bassein, Bombay, &c. If we possessed no such work as that of Father Guimaraens, this conclusion would seem still the only probable one; but the book under review furnishes us with new and powerful arguments in its support. The death of Tukáráma took place in 1649, only ten years before this work was published in Lisbon. It is probable, then, that our poem may have been current in the country while Tukáráma was still alive; we cannot suppose that so important a production would remain unknown until the Lisbon impression was disseminated in India. Probably, the work then, as more recently, would be extensively copied and circulated in MS. Again, the life of Tukáráma, as compiled by Mahipati, was written in 1774, that is, 115 years after the publication of the "Christian Purana" of Father Guimaraens; — and no one who knows how rapidly history in India passes into fable, will doubt the high probability of the story of the boasted hero-saint of Maháráshtra having been in part shaped

after the Christian narrative. Nothing so omnivorous as Hinduism ! It absorbs and assimilates every thing within its reach.

II.

The other works need not detain us long.

One is a publication in Portuguese and Romanized Marathi, the double title of which reads thus :

CATECHISMO DA DOCTRINA CRISTAM. Em Roma MDCCLXXVIII. Na Estamperia de Sagrada Congregação de Propaganda Fide.

CRISTANCHI SASTRAZZA CATHEXISMO. Rumaza M.DCCCLXXVIII. We have a testimony dated 5th February 1778, and signed by *Eugenio Gomes, Sacerdote Portoghese di Goa, pratico in lingua Marastta*, that the work contains nothing contrary to the holy faith and good customs ; and this is followed by the *imprimatur* of Fr. Thomas Augustinus Ricchinus.

The work, then, is a "Catechism of Christian Doctrine," authoritatively printed at Rome for the Portuguese Christians in the Maráthá country. The Portuguese and Maráthí are on alternate pages. It extends in its bilingual form to nearly 173 pages.

It is interesting as exhibiting the Maráthí language as written by Portuguese ecclesiastics sixty years ago. On the whole, the language is more correctly expressed in this work than in the one we were lately considering ; but the orthography is still extremely careless, and the nicer shades of enunciation are entirely overlooked.

The rendering of theological terms in the languages of India is a difficult subject that has attracted much attention from Protestants. The Portuguese theologians seem to have cut the knot in a great measure ; they generally transfer the original term into the Indian languages. Thus we read. *Question. How many sorts of virtues are there ? Ans. Two ; Theological and Moral.* Which is thus given in the Maráthí. *Gunáche pracaary katic hayeta ? Don : Theologal guna, anim moral guna. The Holy Catholic Church is made Sant Igreja Catholik. The Holy spirit is Spirt Sant. Lent (in Portuguese Quaresma) is Corresma.* The seven sacraments acknowledged by the Romish Church, are rendered *Baptismu, Crismu, Eucaresty, Confissão, Extrema-unção, Ordy, Matrimony*, — all these words being entirely without meaning in Indian languages. When Indian terms are adopted, the

choice is sometimes singular. *Prayer* is rendered *zhap*; *charity* is *mougha*; *heaven* is *Vaimcutt* (Vaikunth, the heaven of Vishnu). *Hell* is *Yemacondh* (the gulf of Yama). The *Communion of saints*, is *bhagtamzza yecvhattzcar*.

The following is the version of the decalogue :

1. *Yecazza Dewàlà vandixil anim sampurna moughaxim lekixil.*
2. *Parmeshóràchy annawà, sawà naim wavy.*
3. *Aditwar pallawè Dewachy bagty kharuna.*
4. *Maya Bapàlà mandleawà muràd haumea boughawà.*
5. *Apcuxxim, va Aphkarnexim manuxàzzàgiu naim ghatawà.*
6. *Párduar naim kharawy.*
7. *Zzoury nuim kharawy.*
8. *Zutty guay naim deawy.*
9. *Pâr strichy hixà naim kharawy.*
10. *Pâr vhistuzzà louba naim kharawà.*

To aid the Maráthí scholar in the decyphering of the above rather enigmatical sentences, it may be mentioned that the second commandment is entirely omitted in this catechism.

III

The third of the works which we are now to notice is entitled : *MANUAL DAS DEVOCÕES E DOCTRINA CRISTA. Em Portuguez e na Lingua do Paiz : accrescentada com outros uteis exercicios da piedade Christã. Impresso em Bombaim, Anno 1848.* It is a work in 18 mo. of 123 pages, 70 of which are in Romanized Maráthí, the rest being in Portuguese with a few pages of Latin. A catechism, the creed, the Lord's prayer, and various other prayers, are contained in it.

It is evident that the Portuguese ecclesiastics never reduced the orthography of the Maráthí language to a system. Even in the same work, a word may be spelled in three or four different ways. The same word, as it appears in different works, is so disguised as sometimes to escape recognition. The Lord's Prayer is given in these two works we have last been noticing in exactly the same version, but the spelling varies considerably. In the newer work, the Lord's Prayer reads

thus: (We give it exactly as it stands, — the spelling and punctuation are wretched).

Amache Bapa, tum Soarguim hais, tuzam nau thor hou : tuzam raz amala, heu tuzi Cuxi Zaixi Soarguim hote taixi : Sausarim hou aza amachy dar disachy rogi aza amala de annim amachim Patacam Bacassa Zaixim amin amache Chucaliala bacaxitum anim amala mathe Budim parum noco deum tarim gem cahem amavar Vigin hete tem nivar. Amen Jesus.

IV

I regret that I am compelled to conclude this article before I have it in my power to notice at length a Grammatical work on the Maráthi language composed by the Portuguese. After a long search, I have at length discovered a Portuguese gentleman in Bombay who very recently possessed the work in question, but who unfortunately lent it about three months ago to a priest proceeding to Goa, from which I am daily in expectation of receiving it. In the meantime I copy the title of this rare work, as it is given in the catalogue of the Library of the Hon. East India Company. *GRAMMATICA MARASTTA; in Alphabetis Variis. Vol. ii 8vo. ROMAE, Typis Propag. Fide, 1778.*

It will be seen that in date and place of publication, this work corresponds with the former of the two catechisms mentioned above.

A specially interesting feature of the Grammar is the *various characters* in which it is said to be written. The Marathi works usually current among the Portuguese in W. India, express the language in Roman characters solely, and consequently the sounds are not given with precision. We may presume that the various characters referred to are the Devanágari, the character called *Mod'*, or current hand, and the Roman.

ART. XII—*On Foraminifera, their organization and their existence in a fossilized state in Arabia, Sindh, Kutch and Khattayawar.* By H. J. CARTER, Esq., Assistant Surgeon, Bombay Establishment.

There is no subject more deserving the attention of those in pursuit of information with which it is connected, than the study of the *Foraminifera*, from the little that is known of their habits and organization, and the important part they have fulfilled and are still fulfilling in the formation of the calcareous strata of the globe; and there is no one more favorably situated, perhaps, for prosecuting this study, than the zoologist and geologist of Western India.

Whether his travels be in Sindh, or Kutch, or Khattayawar, over the peninsula of Arabia, or the eastern extremity of Africa, the shores of the Red Sea, or through Egypt and the Holy Land, the remains of myriads of these little animals meet his view; beds of them are found living in the shallow water of the neighbouring seas, and the sandy beaches are almost wholly composed of their didymous testæ.

They abound in a microscopic form in the older tertiary formations of Europe,—in the upper part of the cretaceous system,—and may be traced down through the Oolite to the Lias * and to the Mountain Limestone, † but it is not until we approach the southern parts of Europe, the Pyrenees and the northern shores of the Mediterranean that they begin to appear in their largest and most striking forms, and least of all perhaps until we arrive in Sindh where the largest fossilized species averages two and a half inches in diameter. ‡

* Ann. and Mag. of Nat. Hist. 1841. July No. 45. p. 390.

† Dr. Buckland on the Agency of Animalcules in the formation of Limestone. Edinburgh New Phil. Jl. 1841. p. 441.

‡ This species is a nummulite? It is $2\frac{1}{2}$ inches in horizontal and 1-6th of an inch in vertical diameter. It diminishes in thickness from the centre to the circumference. The last whorl embraces and encloses all the rest as in *Orbiculina* (D'Orbigny). In its fossilized state it is wavy. It appears to be the largest species of nummulite on record. It is found about Kurrachee in rolled pebbles. Its external surface is smooth.

M.M. Joly and Leymerie have incontestably proved by their minute examinations of the nummulites of the subpyrenean basin, that they are essentially *Foraminifera*. *Comptes Rendus* Oct. 25. 1847.

Strata of great thickness, almost wholly composed of the remains of these animals are spread over many thousands of square miles in the countries I have mentioned. The great Pyramid of Egypt is based on rocks hewn out of them; Ehrenberg has numbered a million of them in a cubic inch of chalk; about the same number exists in a cubic inch of the Poorbandar limestone of Khatt yawar, and between three and four millions of them have been enumerated in a single ounce of sea sand.*

They are at once the most numerous of all visible solitary animals on record, (that is visible to the unassisted eye,) which ever have existed, or which do exist at the present day, on the face of the earth, † and yet so little is known of their natural history and organization, that up to the present time they cannot be said to have definitely received their position in the Animal Kingdom.

That such should be the case, is easily conceived, when we reflect on the obstacles that oppose it, viz.—That where the most acute observers are most numerous, there these animals, although they abound both in their living and fossilized forms, pass from their extreme minuteness almost unnoticed, and for the same reason offer a decided barrier to those who would pursue their organization; while in the countries where they are most abundant and where their largest and most striking forms exist, it is only the occasional traveller, who cursorily notices them, who witnesses the vast masses of limestone which have been formed from their accumulated remains, and who has only time to assure himself of the fact, and to wonder at leisure, at the important agency these little animals have held in the formation of the stratified crust of our earth.

The study therefore of the *Foraminifera* so comparatively new and

* Mantell Wond. Geol. p. 321

† I of course include among *Foraminifera*, the genus *Orbitolites* (Lam). "In North America, the Eocene limestone of Suggsville, which forms a range of hills 300 feet in height, is entirely composed of these lenticular bodies." Wond. of Geol. Mantell p. 249. Characteristic species, *Orbitoides Mantelli*, formerly, *Nummulites Mantelli*. Vide *Quarterly Jl. Geol. Soc.* Feby. 1843 p. 13. Having found these fossils in their large and in their minute forms, so constantly associated with *Foraminifera*, to the exclusion of all other organic remains, (as in the Poorbandar limestone of Khatt yawar of which hereafter,) I think that though they differ from nummulites in the arrangement of their cells, &c, yet the fact of nummulites or their allied genera being their constant and almost exclusive associates, seems to confirm without the necessity of further evidence the accuracy of Ehrenberg's classification, in placing them among *Polythalamia* (*Foraminifera*). D'Orbigny appears to have made a genus of them which he has called *Cyclolina* Sp. *Cyclolina cretacea*. *Foram. Foss. du Basin Tertiaire de Vienne*. 4to. p. 139. Tab. XXI. figs. 22.25.

yet so intimately connected with the changes which have taken, and which are now taking, place, on the surface of the globe, is one of unusual interest, and particularly so to those who are favorably situated for prosecuting it.

It is under this impression that I am induced to offer the following epitome of what has been discovered in their organization, and to add a few observations of my own, on the existence of their fossilized remains on the south-eastern coast of Arabia, in Sindh and Kutch, and in the Poorbandar stone of Khattiyawar.

The name *Foraminifera* was originally given to this class of animals on account of the great number of holes which exist in their shells; they have also been called *Polythalamia* from the number of chambers of which their shells are compounded, and last of all, since the discovery of the animal, they have been called *Rhizopoda*, from the root-like extension of their tentacular prolongations. Of these names the first is the most, and the last the least, in use.

They vary in size from an object which can hardly be distinguished by the naked eye to a disk $2\frac{1}{2}$ inches in diameter,* and their shells, which are composed of carbonate of lime, with the exception of the genus *Gromia* (Dujardin) which is membranous, may be compounded of one or more chambers, grouped together in almost any form that can be conceived. The first is the smallest chamber, and the last formed, the largest of the group.

In 1825, when D'Orbigny, (whose name is inseparable from the study of the *Foraminifera*) published his classification of *Cephalopoda*, he placed the *Foraminifera* among them, and gave an imaginary description of the living animal, to say the least of which he has since repudiated. Certainly D'Orbigny has made known to us much more about these animals in their fossilized state than any other Naturalist, and it is a pity that he should have trusted to his imagination for that description of the living animal which with his experience, he might have easily obtained and more faithfully given from actual observation. It is enough to repeat here that he stated their shells to be internal, which in reality are external to the animal, and classed the *Foraminifera* amongst the highest when their place is amongst the lowest of the invertebrata. In doing this he appears to have been misled by the almost identity of form which exists between some of the shells of *Foraminifera* and of those

* Sindh specimen described.

belonging to *Cephalopoda*, and his error affords a useful lesson of the danger of asserting facts upon mere resemblances.

For ten years after D'Orbigny gave his description of the animal of *Foraminifera*, no one appears to have taken much trouble to question its accuracy, until Dujardin took up the subject in 1835, while residing at Toulon, (where he had ample opportunities of testing the truth of D'Orbigny's pretended discovery) and after having carried on his researches most perseveringly for some time, at length came to the conclusion, communicated to the Academie Royal des Sciences of Paris in the month of June of the year mentioned, that the *Foraminifera* were not molusca, nor did they belong to any of the established classes.

In describing their organization Dujardin stated that all their chambers were occupied by a red or orange colored animal matter, highly contractile, and possessed of the consistence of mucus; that this was susceptible of extending itself into threads which were filled with irregular granulations, but without the presence of any organs. On carefully observing these animals in their living state, he had seen, with a high magnifying power, in *miliola* a soft mass projecting from its aperture (analogous to the substance of the interior) which slowly underwent a change of form, and from which a tuft of minute filaments radiated, from a common centre of attachment; these filaments prolonged themselves in ramifications to five times the diameter of the specimen (*miliola*) from which they proceeded, and at length became of such extreme tenuity, as to be followed only by changing the direction of the rays of light. Further, he observed in these filaments, a movement of *reptation*, by which the animal advanced from 5 to 6 millimeters per hour. The filaments appeared to be composed of a primitive animal matter, which extended itself forward in the manner of roots; hence the name *Rhizopoda* which Dujardin proposed for these animals. In *miliola* and *gromia*, these filaments came from their aperture;—in *crestellaria* from the last chamber, and in *vorticifera* from different pores of the disk.

As to their manner of reproduction Dujardin had noticed during the previous year, that in *truncatulinu*, the animal matter was grouped together in certain cases, in globular masses, as the green matter of *zygnema*.

Finally, in concluding his communication he states, "we see that it is

impossible to keep these animals among the microscopic *Cephalopoda*; what rank shall be assigned to them? ”*

The discovery then of the animal of *Foraminifera* appears to be due to Dujardin.

In November 1835, he exhibited at Paris several living specimens of *verticillaria* and his genus *gromia*, † and during that winter continued his researches into their organization, with a view to establishing the relation that might exist between them and the *Infusoria*.

In comparing them with *Infusoria*, he states, in a note addressed to the Académie Royale des Sciences of Paris, ‡ “ I have always been guided by an idea suggested by Bory St. Vincent who, after having seen the living *Rhizopoda*, was struck with the great analogy which existed between the filamentous prolongations of these animals and the expansions of the *amœba* or *proteus*, and directed my attention to the point.”

Lastly, Dujardin exhibited before the Acad. Roy. des Scs. at Paris in 1836, § some animalcules, called by Ehrenbergh *arcella aculeata*, but which Dujardin regarded as freshwater *Foraminifera*, and through these he imagined the series to be continued from the *amœba* to *miliola*,—that is through *diffugia* a species of *amœba* to *arcella*, from the latter to *gromia*, and from *gromia* to *crestellaria*, and thence to *miliola*.

After Dujardin, Ehrenbergh took up the subject, and the result to his researches is as opposed to D’Obigny’s description, as it is confirmatory of Dujardin’s observations.

In a memoir read at the Royal Academy of Scs. at Berlin in 1838, || Ehrenbergh stated that the Foraminiferous shells were inhabited by elegant little bodies which played an important part in nature, and might frequently be found to number more than a million in a cubic inch of chalk; also that after a series of observations made on recent species both living and dead in the Red Sea and elsewhere, he had come to the conclusion that their place in the Animal Kingdom should be among the *Bryozoa*.

In the month of October 1839, ¶ Ehrenbergh also, exhibited living specimens of these animals, to the Academy at Berlin, (two) which were

* Acad. Roy. des Scs. seance Juin 22, 1835. † Idem seance Nov. 15, 1835.

‡ Seance Fev. 1. 1836. § Seance Juin 11. 1836.

|| Idem seance de 16 Janvier, 1840. l’Institut. No. 350. Sep 1840 p. 309.

¶ Acad. Roy. des Scs. Berlin. Seance de 16 Janvier 1840. Vide l’Institut No. 350 Sep. 1840 p. 309.

taken at Cuxhaven, and out of the fossilized remains of which Ehrenbergh stated the chalk to be principally composed ; and in January 1840, he exhibited ten other species of these animals, * at the same time communicating the following observations on their organization :

“The first and largest cell of these animals, sometimes also the 2nd and occasionally as far as the 4th back, contain only the transparent part of the animal ; beyond this, the cells are filled with two large organs differently colored. One and the principal is an alimentary canal, thick, grey, greenish, which, like the whole of the body is articulated ; this extends itself from chamber to chamber and its divisions are united by an œsophagus or syphon. When the shell is removed by acid, the silicious carapaces of *Infusoria* which the animal has swallowed, may be observed (in *nonionina* and *geoponus*) as far back even as the last articulation of the alimentary canal. The structure of this canal is not polygastric, but simple ; expanded in the articulations, and possessed of a single aperture which is situated anteriorly. In *nonionina* the articulations are distinct and connected by one syphon ; in *geoponus*, they are multiple, and each set connected by its proper syphon”.

Independently of the alimentary canal, a horny brown yellowish mass is seen in every articulation of the spire, the first excepted ; this which is granular, Ehrenbergh considers to be the ovary.

In searching for a purely negative character, Ehrenbergh states that it consists in the want of pulsatory vessels ; that while he has always recognized pulsations in the *Mollusca* and the smallest aggregated or compound *Ascidia*, he could never do so in *nonionina*, and *geoponus*, the two species of *Polythalamia* (*Foraminifera*) which he more particularly examined. †

This is what Ehrenbergh has added to Dujardin's observations, and no one since Ehrenbergh appears to have taken up the subject.

Up to the present time, all that has been seen of the organization of *Foraminifera*, consists in their ambulacral prolongations, an alimentary canal with an aperture anteriorly, and a brown mass of granular matter accompanying it, which appears to be an ovary.

To this I have only to add, in confirmation, that I have seen in *rotalia* nearly all that has been described by Dujardin and Ehrenbergh ; while watching them in their living state, and after having dissolved off their shells by means of weak acid and water, to which was added a little

alcohol. The alimentary canal, however of the specimens I examined, which was surrounded by the brown substance mentioned, was not only simply dilated in each chamber, (after having passed through the syphon or constricted aperture in the septum,) but also formed a loop, the bend of which reached to its external margin.

Habitat.—*Foraminifera* are to be found more or less on all shores, living in beds or scattered in soundings and in shallow water, or dead and dried in their shells forming part of the sand of most beaches.

On the survey of the S.E. coast of Arabia they were invariably brought up by the ship's lead, and by a private lead which I used to cast for the purpose. They were found to be most numerous in about 10 to 20 fathoms of water, rather in sandy than in muddy bottoms, scanty in deep water, and never (by the lead) among rocks and coral ground. In one bed passed over, which extended for several miles, in about 20 fathoms of water, the sounding lead came up covered with them at each throw, they were the largest living species I have ever seen, and principally consisted of the genus *Discorbis* (Lam.). Most measured from 2 to 3-10ths of an inch in diameter, some contained animals and others were empty; the latter were readily distinguished from the former by their pearly whiteness, while those which contained animals were invariably covered with a thin greenish cuticle, like the deciduous epidermis of shells generally.

The following is a description of this *Discorbis*.

Discoid, thin, flat 3 - 10ths. of an inch in its widest diameter. Consisting of 3 whorls, with the external margin of each whorl elevated on both sides. Chambers regularly increasing from a transparent central cell; septa running in a contrary direction to the spire. Perforations on the surface of the shell scanty and scattered,—in the septa numerous, the largest lying close to the inner whorl.

With respect to the position of *Foraminifera* in the Animal Series, it has already been shewn, that they cannot be classed, as formerly, among *Cephalopoda*, and their relation to the *amæba*,* noticed by Dujardin, is only based on their rhizopodous prolongations; they have nothing else in common with the *amæba*, so far as has yet been discovered, save that the silicious shields of animalcules may be seen in the alimentary canal of the former as the horny crusts of loricated animalcules, and perhaps their silicious carapaces also may be seen in the folds of the integument of the *amæba*.

* Vide Art. II of this No. for a description and figure of the *amæba* (sponge-cell ?).

Ehrenbergh regards them as coral animals. The one simple (*nionina*), the other compound (*geoponus*); the former possessing many apertures of communication through their septa, the latter only one. Hence his two divisions of *Polythalamia* (*Foraminifera*) into *monosomatia* (single-bodied), and *polysomatia* (many-bodied). He considers that the absence of pulsating vessels in them, should place them far from mollusca, and far from the articulated worms, and that their position should be among the *ganglionated animals* without pulsation, or *vascular animals without spinal marrow* (*Ganglioneura asphycta*), although neither their nervous nor their vascular systems have as yet been seen. * He therefore places them among *Bryozoa*, that order which appears to establish a passage between the inferior *Zoophytes* and the last of the *Mollusca*, and considers them nearly allied to *fustra* † (*eschara* &c), from their organization, their food and the arrangement of their tests.

Their mode of progression by ambulacral filaments which pass out through the perforations in their shells, allies them to *Echinoderma*, and it is worthy of remark, that the fossilized remains of these two orders (so far as my experience goes) are generally found to abound together; and where both are not equally plentiful, the preponderance is in favor of *Foraminifera*, and the deficiency in *Echinoderma* not supplied by the remains of any other animal. In Lower Sindh this is particularly the case, and it prevails throughout the S.E. coast of Arabia. I may here mention that I have frequently met with *scutellæ* in Sindh, which, without having presented their upper surface, might have been in their vertical sections, mistaken for nummulites; the rhomboidal fracture however with which the testæ of *Echinoderma* always break, may generally be taken as guide to the class to which they belong.

FOSSILIZED REMAINS OF FORAMINIFERA.

Concerning the fossilized remains of *Foraminifera* and their geological distribution in Southern Arabia, Sindh, Kutch, and Khattiyawar, I have much more to say than time or space will here permit; my observations therefore must be confined to the subject as much as possible,

* Acad. Roy. Sc. Berlin seance 16 Janvier 1840 loc. cit.

† L' Institut No. 294 Aug. 15. 1839 p. 281.

desirous as I may be of introducing matter which would make this paper more interesting to the general reader.

Beginning with Arabia, I would briefly premise, that the south-east coast of this country, viz. that which looks towards the Arabian Sea, in length about 900 miles, is chiefly composed of one vast limestone formation, averaging between two and three thousand feet in thickness. This formation is broken up as it were into two great portions, the angle of fracture, or of depression, or, as it is called, the "synclinal line," being in $20^{\circ} 30''$ N. Lat. and $58^{\circ} 30''$ E. Long. Here the land is very nearly on a level with the sea; it is the lowest part of the whole south-eastern coast, is opposite the island of Maseera, and is the centre of the seaward boundary of the desert of Akhaf. On each side of it the land gradually rises until it obtains its maximum height of 5 or 6 thousand feet (on the N. E.) in the Green Mountains of Oman, which are scarped upon the sea; and on the S. W., in the Saban Mountains, in $17^{\circ} 30''$ N. Lat. and $55^{\circ} 23''$ E. Long. from which the average height of the land, (which is that mentioned) continues the same, with the intervention here and there of ravines and valleys, on to its termination in the Fadheli Mountains behind Aden. It is to this point of fracture or depression, opposite the island of Maseera, that I now wish to direct attention, for it is here that we might expect to meet with the uppermost or last formed deposit of this limestone series; and if this be the case, it here consists of a *Miliolite*, the thickness of which cannot be further ascertained than that it rises from 30 to 40 feet above the level of the sea, which at this part hardly exceeds five or six fathoms in depth as many miles from the shore.

This deposit is uniform in its granular structure, and is almost entirely composed of the remains of microscopic *Foraminifera*.* It is so loose on the surface, that the upper and exposed part has become disintegrated to a good depth, and has converted the originally rugged deposit beneath into dome shaped mounds, covered with soft white sand, which resembling the snow in the northern regions in its whiteness, is in some parts so caked and hardened as to resist the impression of the foot, and in others so yielding as to be displaced by the gentlest breeze. These sand hills, which correspond with the irregularities of the harder parts beneath, and which average in height about 100 feet above the level of

* See composition of the Poorbandar limestone hereafter.

the sea, probably extend over a great part of the desert of Akhaf, and form the "winding sands" mentioned in the Khoran.

Of this *Miliolite* I shall state no more at present, save that it is found still further to the S. W. superposing as usual the limestone formation of this coast (at Bandar Resut in 54° E. Long. and at Rakiut a few miles to the westward of Ras Sajar), and return to it again when speaking of the Poorbandar limestone of Khatiawar.

Leaving the mainland of Arabia and passing across to the island of Maseera immediately opposite, distant about ten miles from the shore, we meet in limestone strata, which lie beneath the *Miliolite* just mentioned, a vast bed of nummulites, the species of which average from 1 to 5 lines in diameter, are doubly convex in their form, and are similar to, if not identical with, the species found at Lukput in Kutch, and called by Sowerby *nummularia acuta* and *obtus*. * The thickness of this bed I had no means of ascertaining, but the specimens are so plentiful, where they have been denuded of the superposing strata that they may be gathered up in handfuls, in the manner of earth; a few corals are associated with them, great numbers of the so-called *serpula recta* † of Kutch (which also abound in Sindh and on the mainland of Arabia opposite Maseera) crabs, and the remains of *Echinoderma*, among which the most striking are those of a *galerite*, measuring $5\frac{1}{2}$ inches high and $6\frac{1}{2}$ in anteroposterior diameter at base.

The next place on the S.E. coast of Arabia where I have observed the remains of *Foraminifera* to any extent, is in the compact white limestone above the town of Morbat in $54^{\circ} 49'$ E. Long. (about 270 miles to the S.W. of Maseera), where the summit of the scarped land, which looks towards the sea, is between 4 and 5 thousand feet in height. Here, some way down from the top, but still in the upper part of the series, *orbitolites* and *fascicolites* form a good portion of the rock. The *orbitolite* is papyraceous and similar to that found equally abundant in the Hala Mountains of Sindh, and the *fascicolite* is similar to the species of that fossil which abounds about the town of Tatta in the same country. They are also accompanied as in the Hala Range by a plentiful admixture of shells, corals and other fossils.

I wish particularly to direct attention to this *orbitolite* and *fascicolite*, because varieties of these two fossils occur together in great

* Grant's Geol. of Cutch Geol. Trans. 4to. Vol. v. part 2nd. Pl. xxiv. figs. 13 and 14.

† Idem Pl. xxv. fig. 1.

numbers, both in Sindh and Arabia, and are probably therefore characteristic of the same formation.

The *orbitolite*, however, of Arabia now under consideration is composed of cells just half the diameter (viz. 1-970th of an inch) of those of the Sindh variety, although it exceeds it a little in the diameter of its disk; and the *fuscolite* associated with it, is not elliptical (*F. elliptica* Parkinson) as it is in the Hala Mountains, but spheroidal, similar to the one which abounds in the neighbourhood of Tatta.

The following is a description of the Arabian *orbitolite*:

Flat, orbicular, doubly concave; presenting elevated concentric lines on its surface; formed of layers of cells disposed in concentric circles. Cells 1—970th. of an inch in diameter. Average size about 1 inch in horizontal, and 1-15th of an inch at the circumference in vertical, diameter.

In the Sindh species,* the cells which are 1-435th of an inch in diameter, commence in ellipses † of one or two tiers deep, around a non-cellular confused centre, and afterwards become circularly disposed and six or more tiers deep. A vertical section presents a quincuncial arrangement of these cells. (Plate viii. fig. 1. b.). I could not from their minuteness detect how they commenced in the Arabian species, or how many rows deep they were at the thickest part of its circumference. The *fuscolite* associated with the *orbitolite* of Arabia is not cylindrical such as that characterizing the hills about Hyderabad in Sindh, ‡—that figured in Grant's Geology of Kutch, (*F. elliptica* of Parkinson) § and that associated with the *orbitolite* of the Hala Mountains; but more spheroidal, similar to that abounding about Tatta (the "Toomra") used for necklaces (Plate viii. fig. 2.).

Passing still further to the south westward along this coast, we find at Ras Fartak, about 150 miles from Morbat, a pinkish blue limestone rock, occupying or rather cropping out from the base of this promontory; composed, with the exception of a small *cidaris* here and there, entirely of the remains of *Foraminifera*, in the form of small *orbitolites*, averaging 1-6th of an inch in diameter; in size and appearance similar to the small nummulites of the nummulitic rock of Egypt, but convex on one side to a point and concave on the other, thinning off towards the circumference, and without any indication of their cells externally, but with concentric lines on the convex side like those on the *orbitolites*

* Plate viii. fig. 1. † Idem. fig. 1. c.

‡ Jl. By. B. R. A. Society No. viii. 1844. Pl. viii. fig. ii.

§ Op. et loc. cit. Pl. xxiv. fig. 17.

just mentioned. This foraminiferous deposit, so far as can be seen, measures 100 feet in thickness, but is concealed in its extent downwards by its descent into the sea. It is probably the lowest; since the character of the limestone on this coast is to pass from the purest and whitest kinds superiorly into less pure, marly and variegated deposits inferiorly; and thence into silico-calcareous strata which terminate in pure micaceous sandstone. So that the pinkish blue limestone of Ras Fartack is probably among the variegated strata of the series, and therefore the last of the foraminiferous deposits downwards.

Thus briefly given are the evidences of foraminiferous deposits on the south-east coast of Arabia. My observations on them extend much further but what has been stated is enough for our present purpose, the rest must remain for a future occasion.

Let us now pass on to Sindh; — Here the same species of *Foraminifera* met with on the S.E. coast of Arabia are equally abundant. The *fascicolites elliptica* characterizes the limestone hills about Hyderabad, the spheroidal species the limestone about Tatta. *Orbitolites* associated with *fascicolites* abound together in the Hala Range; and through the kindness of Dr. Malcolmson I have received specimens of several nummulites, which form whole hills in the neighbourhood of Sukkur, and which are at the same time identical with all the species found in Kutch, those of the S.E. coast of Arabia, and those of Egypt. Among the mass of rolled pebbles found between Kurrachee and Ghara, are in all probability specimens of all the foraminiferous or nummulitic deposits in Sindh; for these pebbles must have come from the Lukki and Hala Mountains where the limestone series of Sindh may be expected to exist in its full development.

For the foraminiferous or nummulitic deposits of Kutch I must refer the reader to Col. Grant's Geology of that country already cited. He will there find the nummulitic ground laid down, and many of the nummulites named, figured, and faithfully described. *

I have now to return to the *Miliolite* of Southern Arabia, as it exists at Poorbandar in Khattayawar; and here I regret to state, that I have not yet been able to visit it, to ascertain what strata it superposes, or if by any, it be superposed; since such an examination would furnish me with

* This paper so accords with what I have seen on the S. E. coast of Arabia and in Sindh, that I feel assured it must be most accurate in its details and will prove an invaluable key to the geology of these countries.

a key to the relative position of this formation in the southern part of the Desert of Akhaf, where descending into the sea I had no opportunity of ascertaining its extent downwards, and being covered with loose sand above had no chance of arriving at any satisfactory conclusion as to its termination in that direction.

The Poorbandar limestone derives its specific denomination from the place near which it is quarried in Khattiyawar, and is imported at Bombay in the shape of blocks and flags for building purposes. It is of a brownish white color, uniform in structure, granular, and composed of oolitic particles of calcareous sand united together into a firm compact rock. This granular structure first attracted my attention, and knowing from the discoveries of Ehrenbergh, that most of the cretaceous deposits were almost entirely composed of the remains of microscopic *Foraminifera*, and that Dr. Mantell in testing the truth of Ehrenbergh's observations in examining the "chalk and flint of the S.E. of England" had not only confirmed his statements, but had moreover found that the softer and more perishable parts of the bodies of these animals had also become mineralized; * I thought it probable that this deposit also might be composed of the remains of them, and that certain yellow specks which it contained might be the mineral which Dr. Mantell had described, as supplying casts or fac-similes of their bodies. To ascertain this, a portion of it was reduced to coarse powder, and the yellow particles having been liberated from their connexion with the carbonate of lime by an acid solvent, they were found to be what I had expected from Dr. Mantell's observations, viz. the casts of the interior of microscopic foraminiferous shells, † of the most exquisite beauty in their forms and symmetrical development; and the more highly they were magnified, the more minutely could be distinguished the innermost recesses of the cells or chambers they represented. The larger of these casts seldom approach to or exceed the 25th part of an inch, so that their forms, in detail, are entirely invisible to the unassisted eye; occasionally the figures of the fossilized shells which enclose them can be partially seen, but this is seldom the case, they having become transformed by partial dissolution and recrystallization into the oolitic grains of which the rock is composed.

* For this mineral Dr. Mantell has proposed the name of *molluskite*. Phil. Trans. for 1846, part iv. p. 465.

† See Plate VIII. fig. 1.

Having thus discovered that the Poorbandar limestone was almost entirely composed of the remains of a variety of *Foraminifera*; I subjected from time to time portions of it to the analysis I have mentioned, and at the Society's Meeting held on the 6th June 1848 had the honor to shew to the Members then present several drawings of the genera I had recognized, and to exhibit under the microscope at the same time some of the most perfect and beautiful of the casts I had obtained. One of them, belonging to the genus *Nodosaria* ? (D'Orb.) probably nearly allied to *N. spinicosta* (D'Orb.) * is figured in Plate ix fig. 1.

Since examining the Poorbandar stone, I have received D'Orbigny's beautiful work, entitled *Foraminifères du bassin Tertiaire de Vienne*, and from what I have seen therein, think, that with its plates it would almost be as good a hand-book for the former as for the latter; it being understood, however, that where you have the shells or tests themselves in the tertiary deposits of the Basin of Vienna, the casts only appear in the Poorbander limestone of Khattayar.

The fossilized *Foraminifera* in the Poorbandar limestone, although occasionally reaching the 25th, do not average more than the 100th part, of an inch in diameter, so that more than a million of them may be computed to exist in a cubic inch of this stone.

They may be separated into two divisions, those in which the cells are large, the regularity of their arrangement visible, and their bond of union consisting of a single constricted portion between each,—and those in which the cells are minute (Plate ix fig. 1.), not averaging more than the 900th part of an inch in diameter, the regularity of their arrangement not distinctly seen and their bond of union consisting of many thread-like filaments. The latter division appears to belong to D'Orbigny's order *Stichostega*,—to Ehrenbergh's *Polysomatia*,—and should, I think, be classed with *Orbitolites* from the *smallness of the cells*, their *want of spiral arrangement*, * and the appearance in the centre or at one end of having once been attached to a foreign body.

Chemical Analysis of the Poorbandar Limestone.—To ascertain the mineral composition of the amber colored particles or casts, after having found that it was carbonate of lime with which they were surrounded, I placed them for a few moments in the reducing flame of a blowpipe, and

* Foraminif. fossiles de Vienne Tab. 1 Fig. 32-133

* See these striking characteristics of this division of Foraminifera compared with the nautiloid forms,—Plates viii and ix figs. 1, 1.

observed that on subsequently exposing them to the influence of a magnet, they were all attracted by it. Hence in a rough way this rock may be said to be composed of carbonate of lime and oxide of iron. I was led to think that the amber colored particles were oxide of iron, from their color, and their analogous position to the masses of *brown hæmatite* which are frequently found in the interior of fossilized gasteropodous shells. This is often met with in the limestone about Hyderabad in Sindh, and much brown hæmatite is there loosely spread over the the surface of the hills, which originally came from this source. I would here also add another observation which is, that accumulations of black iron sand attracted by the magnet appear here and there on the beach or in the landwash, where the surf breaks upon the *Miliolite* of the Desert of Akhaf, each particle of which might have come from the centre of a foraminiferous shell. Dr. Malcolmson has done me the favor to send me a specimen of the same kind of sand from Sindh. May not this sand also have had a similar origin, and may not the *Miliolite* of Arabia be also found in Sindh?

Finally,—we see the vast area over which the fossilized remains of *Foraminifera* are spread in the countries mentioned. We may extend them in their largest forms and in their grandest deposits from the Pyrenees probably to the foot of the Himalayas; it is not known how much of the Atlas Mountains may be composed of them or how far their beds may extend into the Desert of Sahara. The older tertiary formations and the Chalk of Europe abound in their microscopic forms, and in short the whole of the calcareous strata, comparatively speaking, between the points I have mentioned, over which once extended the great sea in which they were deposited, appear to be chiefly composed of their remains.

Lamarck observes after his description of *Miliola* a genus of *Foraminifera*, and the same applies to the whole order:—

“The shells of *Miliola* are the most singular in their form and perhaps the most interesting to consider, on account of their multiplicity in nature and the influence they have upon the size of the masses which are on the surface of the globe, and which form its crust. Their smallness renders these bodies contemptible to our eyes, in fact we can hardly distinguish them; but one ceases to think thus, when one considers that it is with the smallest objects that nature everywhere produces the most imposing and remarkable phenomena. Now, it is here again that we

c.



Fig. 1.



Fig. 2.



a.

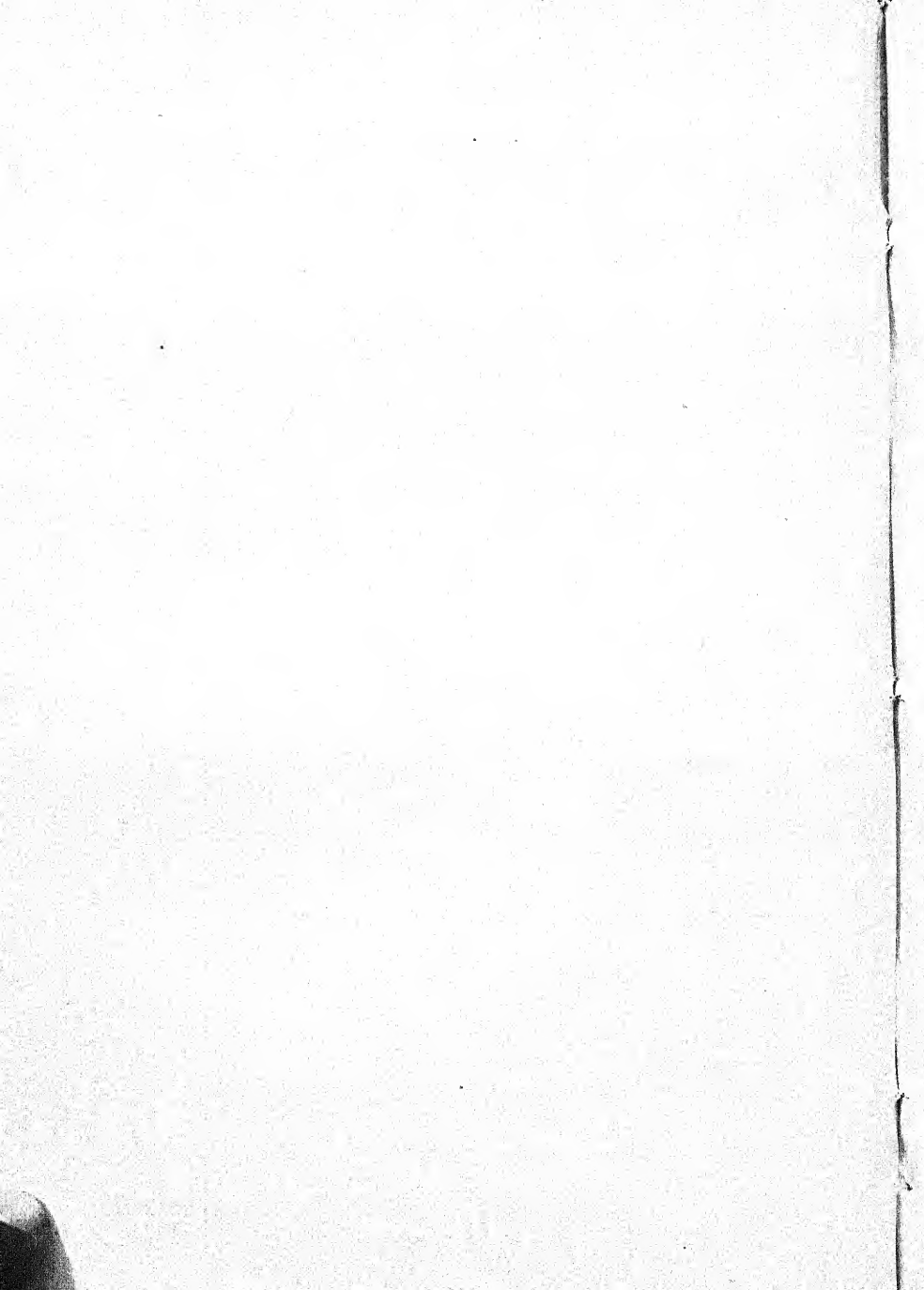
b.



a.



b.



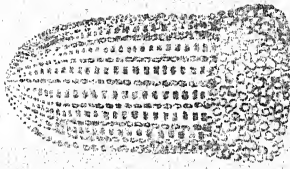
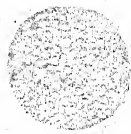
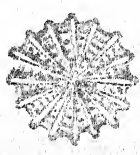
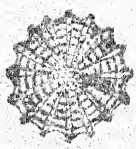
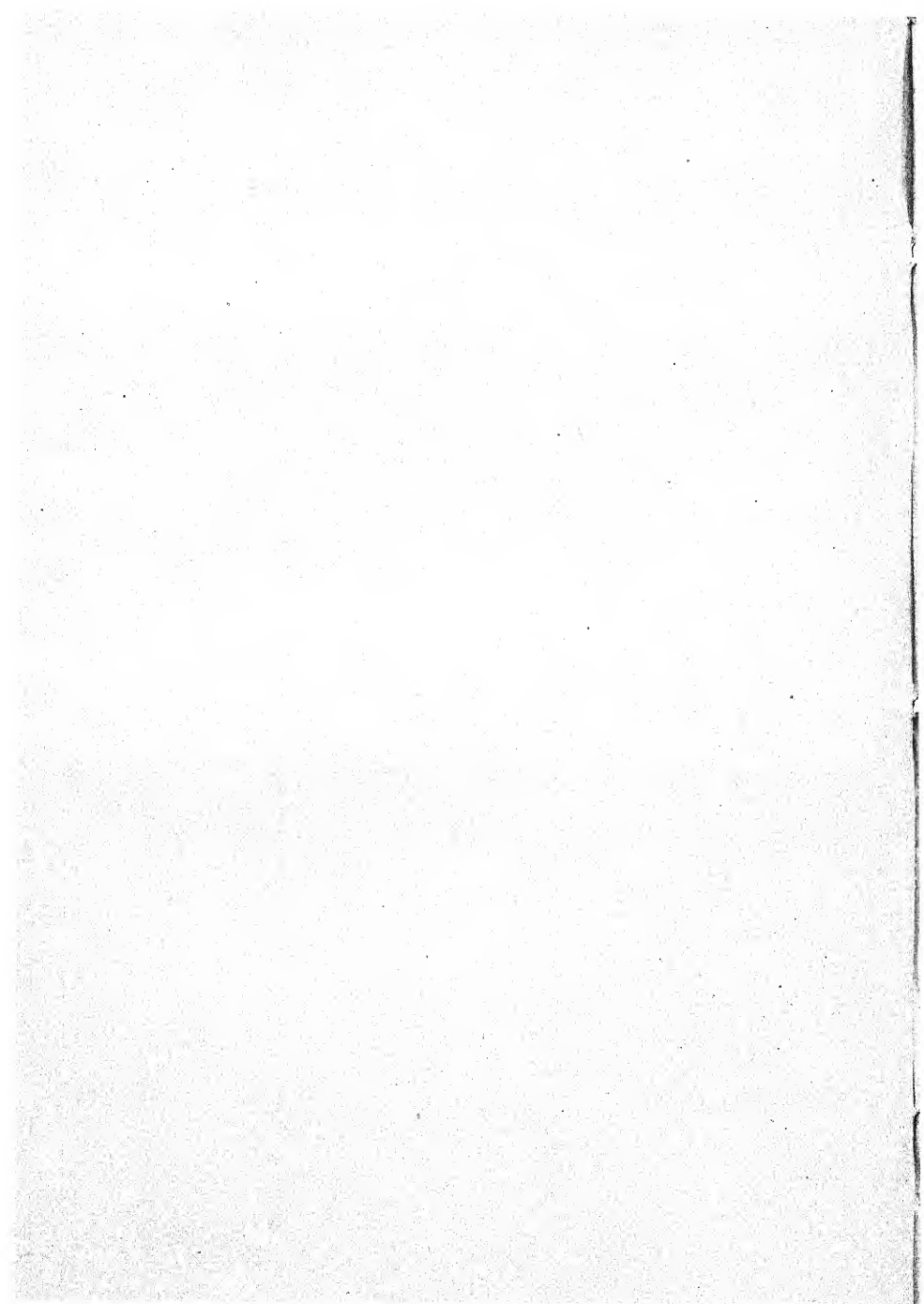


Fig. 1



b.



have one of the numerous instances which attest that in her production of living bodies, all that nature appears to lose on one side in volume she regains on the other in number of individuals, which she multiplies to infinity and with admirable promptitude. Truly do the remains of these little living bodies of the animal kingdom exert a greater influence over the state of the masses which compose the surface of our globe than those of the great animals, as the Elephants, the Hippopotamus the Whales, and the Cachalots, &c. which, although constituting the most considerable masses, are infinitely less multiplied in nature".*

EXPLANATION OF THE PLATES.

PLATE VIII.

Fig. 1. Disk of *Orbitolite* from the Hala Mountains near the river Burán, Sindh,—natural size.

- a. Disposition of cells around the centre, magnified.
- b. do. do. on the surface, do.
- c. do. do. in a vertical section, do.

Fig. 2. *Fasciolite*, of Tatta,—natural size.

- a. Vertical section, magnified.
- b. Horizontal do. do.

PLATE IX.

Fig. 1. Figure of the cast of a foraminiferous shell from the Poorbandar limestone of Khattiyawar, magnified; length about 1—20th of an inch. (Gen. *Nodosaria*? d'Orbigny).

- a. Apex, magnified.
- b. Base, do.
- c. Horizontal section, magnified.

ART. XIII.—*Extracts from the Proceedings of the Society.*

Thursday the 9th December, 1847.

MEMBERS ELECTED.

The Hon'ble Sir William Yardley, Kt. ; J. G. Lumsden, Esq. and Dr. W. Arbuckle.

DONATIONS FOR THE LIBRARY.

Numbers 1, 2 & 3 of the "Journal of the Indian Archipelago and Eastern Asia." Presented by the Editors.

* Lamarck Hist. Nat. des. An. sans Vert. V. xi. p. CCLXXXIX.

ORIGINAL COMMUNICATIONS.

Botanical drawings of the Gogul tree of Sindh (*Balsamodendron Roxburghii* Arn.) and a closely allied species (*Balsamodendron pubescens* J. E. S.) both executed under the superintendence of Dr. Stocks, Vaccinator in Sindh. Presented by Dr. Stocks to accompany his descriptions of these trees.*

Thursday the 13th of January, 1848.

MEMBERS ELECTED.

Cursetjee Jamsetjee, Esq. and H. E. Goldsmid, Esq.

DONATIONS FOR THE LIBRARY.

1st. Journal of the American Oriental Society, No. 1. Vol. III. Presented by that Society.

2nd. Zeitschrift der Deutschen Morgenlandischen Gesellschaft Heft, II. Presented by that Society.

3rd. Nos. 4 & 5 of the Journal of the Indian Archipelago. Presented by the Editors.

PRESENTS FOR THE MUSEUM.

A collection of Fossils from the Green-Sand, Chalk, Red-Sandstone, Lias and Bovey Coal Formations of Devonshire. Also a collection of Shells from the South Pacific Ocean, and specimens of Lava from the Marquesas Islands. Presented by H. B. E. Frere, Esq.

The *Secretary* reported that the appointment of a successor to the late Librarian referred to the Committee of Management for decision had been considered, and that the Committee had resolved to retain Mr. Mendoza to perform the duties of that office at the salary before stated.

Thursday the 18th of February, 1848.

DONATIONS FOR THE LIBRARY.

1st. Meteorological Observations made at the H. E. C. Magnetical Observatory at Madras. Presented by Government.

* This communication was published in the last No. of the Society's Journal.

2nd. An Essay on Female Infanticide with a translation into Gujarathe, by Bhawoo Dajee. Ditto.

3rd. Transactions of the Medical and Physical Society of Bombay No. VIII. Ditto.

4th. General Observations on the Provinces annexed to the Russian Empire under the denomination of the Territory of Armenia; translated from the French with notes by Samuel Marcar, Esq. Presented by the Author.

5th. Bibliographia Armeniaca; by Samuel Marcar, Esq. Presented by the Author.

6th. Journal of the Indian Archipelago, No. VI., and Supplement to No. V. Presented by the Editors.

7th. A Chinese work in 6 Volumes. Presented by Captain C. W. Montriou, I. N.

Respecting the Malcolmson Testimonial it was reported that a Meeting of the Committee of Management had been called on Monday last to carry into effect the Society's resolutions of the 29th Nov. last, but sufficient Members not having been present to form a quorum, no business was transacted.

Resolved.—That the subject be brought forward at the next Meeting of the Society with the following proposition by Dr. Stevenson, viz.—

That the medals when struck be annually awarded as prizes for the best Essays on subjects of Natural History, Chemistry, or some other kindred sciences.

The subscriptions for a testimonial to the memory of the late Major General Vans Kennedy having been stated to amount to a sum much beyond that which would be required to carry out the first resolution of the Society, viz.—That “of erecting a suitable monument over his remains,” It was resolved:—

That as more than a year had elapsed since General Kennedy's death had taken place, the *Secretary* be authorized to expend a sum not exceeding Rs. 600 for carrying into effect this resolution.

Thursday the 9th March 1848.

DONATIONS FOR THE LIBRARY.

1st. *Icones Plantarum Indiæ Orientalis*, by Dr. Wight, Part 1st, vol. IV. Presented by Government.

2nd. *Manual of Materia Medica*, by J. F. Royle, M. D., &c., *Clinical Illustrations of the Diseases of India*, by W. Geddes, M. D., &c. and *Chelieu's System of Surgery* translated from the German by J. F. South, Esq. Presented by the Medical Board of Bombay.

3rd. *La Rhétorique des Nations Mussulmanes d'après le traité Persan intitulé Hadayic ul-Balagat*, par M. Garcin de Tassy, 4me Extrait. Presented by the Author.

4th. *Journal of the Indian Archipelago*, No. 1, Vol. II, January, 1848. Presented by the Editors.

5th. *Memoirs of the Royal Astronomical Society*, Vol. XIV. Presented by Government.

6th. *Proceedings of the Royal Astronomical Society* Nos. 1 to 17, Vol. VII, 1847. Presented by Government.

7th. Nos. 1—4 of the *Bulletin et Annales de L'Académie D'Archéologie de Belgique*. Presented by that Academy.

PRESENTS FOR THE MUSEUM.

1st. Polished Pebbles of Nummulitic Limestone from Lower Sindh. Presented by Major Hughes.

ORIGINAL COMMUNICATION.

A descriptive account of the Fresh Water Sponges in the island of Bombay with observations on their Structure and Development. Genus (*Spongilla*). By H. J. Carter, Esq., Assistant Surgeon, Bombay Establishment.*

The means of carrying into effect the Resolutions passed by the Society at its Anniversary Meeting respecting the *Malcolmson Testimonial*, and the Rev. Dr. Stevenson's addition, "That the medals when struck be annually awarded as prizes for the best Essays on subjects of Natural History, Chemistry or some other kindred Sciences," were considered by the Meeting, and after a short discussion Dr. Stevenson withdrew

* See Art. II of this No.

his proposition, and J. Smith, Esq., seconded by Professor Harkness, proposed for consideration at the next Meeting of the Society:—

“ That the sum subscribed to the Malcolmson Medal Fund, being inadequate to carry out the object of the Society *by the means originally proposed*, be laid out in the purchase of Standard Works, with a view of perpetuating the name of Dr. Malcolmson in connection with the Society, and of promoting among its members the study of those branches of *Natural History* to which Dr. Malcolmson had more particularly directed his attention, and that these books be neatly and uniformly bound, marked with a suitable inscription and placed in a press or shelf in the Museum, set apart for that purpose, and henceforth to be designated and known as the “Malcolmson Collection.”

With reference to M. H. B. Kœnig’s letter to the Rev. Dr. Wilson’s address, dated January 9th 1848, which states that a short time since Mr. Kœnig forwarded through C. J. Stewart, London, a present of 10 volumes to Dr. Wilson and the Society; and that if convenient, he would be obliged to the Society to favor him with 25 copies of each No. of its Journal as it is published, that its contents might be made known in Germany; also that in return, he would send the price of the Journals in cash or in books as the Society might wish. It was resolved that Mr. Kœnig’s request be complied with and his offer accepted, and that 25 copies of the present No., viz. XI, of the Society’s Journal be forwarded to his address with a letter intimating that as many copies of each of the Nos. already published are procurable, if he requires them.

An abstract of the correspondence between the Hon’ble the Court of Directors and the Supreme Government of India, respecting the preliminary arrangements that should be instituted for conducting the Antiquarian researches contemplated by the Hon’ble Court, within the territories of the Bombay Government, was read to the meeting; and copies of the Hon’ble Court’s despatch laid before it, with a letter from J. G. Lumsden, Esq. Secretary to Government, requesting the Society to favor the Government with its opinion on the subject.

Resolved. That the whole of the correspondence be printed, and a copy sent to each member of the Committee, and that the Committee after having given the subject its mature consideration, be requested to submit a proposition in answer to Government at next meeting of the Society.

The *Secretary* announced that No. XI of the Society's Journal had been printed and was now ready for distribution.

Thursday the 13th of April, 1848.

MEMBERS ELECTED.

The Revd. D. O. Allen and Venaick Gungadur Shastree, Esq.

DONATIONS FOR THE LIBRARY.

1st. Dr. Griffith's Private Journals and Travels in India and the neighbouring countries. Presented by Government.

2nd. Posthumous Papers, Botanical, entitled *Notulæ ad Plantas Asiaticas*. Ditto.

3rd. Botanical plates, entitled *Icones Plantarum Asiaticarum*. Ditto.

4th. Madras Astronomical Observations. By T. G. Taylor, Esq. F. R. S. Presented by the Madras Government.

5th. Journal of the Indian Archipelago and Eastern Asia, February 1848, No. 11. Vol. 11. Presented by the Editors.

6th. Jardine and Selby's Ornithological Illustrations, Vol. IV. Presented by Commander Montriau.

PRESENTS FOR THE MUSEUM.

1st. Skin of *Moschus javanicus* from the island of Java. Presented by Captain Beyts.

2nd. Two Specimens of *Limulus heterodactylus* from the China Sea. Presented by Mr. A. Viegas.

3rd. Specimens of Volcanic Rocks from Aden. Presented by Lieut. Hellard I. N.

ORIGINAL COMMUNICATION.

The Story of Tukárâma. From the Maráthí-Prákrit. With an Introduction, by the Rev. J. Murray Mitchell. Communicated by the Author.*

* See Art. I. of this No.

The proposition for employing the money subscribed for the *Malcolmson Testimonial* in the purchase of Standard Works on those branches of Natural History to which the late Dr. Malcolmson had more particularly directed his attention, and that such works should be placed by themselves in the *Museum* and designated the *Malcolmson Collection* was submitted, and received the unanimous approval of the meeting; but before being finally adopted by the Society, it was deemed advisable that it should be circulated as strongly recommended by the meeting, for the sanction of Subscribers now residing in the Island of Bombay.

The *Secretary* reported that in accordance with a resolution passed at the last meeting, the correspondence of the Hon'ble the Court of Directors of the East India Company with the Governor General of India, respecting preliminary arrangements for conducting Antiquarian researches in India, submitted for the opinion of the Society by the Hon'ble the Governor in Council of Bombay with reference to the Monuments and Cave-Temples of antiquity within the territories under the Bombay Government, had been printed and issued to the *Committee of Management* and that a meeting of the *Committee* had been convened for the purpose of suggesting a reply to Government on the subject, but as there were not members enough present to form a quorum for transacting business, a letter to Government had been drafted on the suggestions of those who had assembled which was now submitted for the approval of the meeting. This letter with a few alterations was adopted. It recommended that authentic information as to the number and situation of all the Monuments and Cave-Temples of Antiquity in the territories under the Government of Bombay should be obtained—the means by which this information should be obtained—the willingness of the Society to form a Commission out of their own members to receive and arrange such information, and finally to place it in the hands of the Government for the guidance of one or more persons whom the Government might deem best fitted to undertake the preliminary enquiries contemplated by the Hon'ble Court—lastly, the desirableness of commencing these inquiries as early as possible.

Thursday, the 11th of May, 1848.

MEMBERS ELECTED.

C. M. Harrison, Esq., C. S., Commander Kempthorne, I. N., Professor J. Patton, E. I., and John Henry Kays, Esq.

DONATIONS FOR THE LIBRARY.

1st. Copy of a report on the Survey and Assessment of the Bunkapoor Talooka of the Dharwar Zillah, by Capt. Wingate, Superintendent in the Southern Maratha Country. Presented by Government.

2nd. Two copies of reports of cases treated in the Calcutta Mesmeric Hospital. Presented by ditto.

3rd. The Journal of the Indian Archipelago and Eastern Asia, No. 11, Vol. II., March 1848. Presented by the Editors.

PRESENTS FOR THE MUSEUM.

1st. Specimens of compact Gypsum and Serpentine from the neighbourhood of Candahar. Presented by Dr. Malcolmson.

2nd. Nineteen silver and six copper coins. Presented by Dr. B. White, through Dr. Morehead.

These coins were examined by the Revd. Dr. Stevenson, who states that two of the silver ones are *Bactrian* coins of Menander, bearing a Greek legend, with corresponding Pahlivi letters on the obverse, the same as those described in Vol. IV. of the Bengal Asiatic Society's Journal, and figured in plate XXVI. of that volume. The rest, viz. 17, belong to the Indian Dynasty, called by Prinsep the Royal Satraps of *Saurarashtra*; they have all the *Chatya* or Buddhist emblem, and are the same in every respect as those found at *Juneer*, and described in the last No. of the Society's Journal. Of the six copper coins, four are *Parthian*, and have a Zoroastrian Priest on one side, throwing an oblation into a sacred fire, &c., and a warrior Prince on the other; there are rudiments of letters, but nothing can be made out of them. The remaining two are doubtful; the figure on one side has a trident by it. To class the latter, books are required which are not in the Society's Library.

3rd. A *Copper-plate Grant*, supposed to have been found in the vicinity of Ujein. Presented by Colonel Sandys, through the Lord

Bishop of Bombay. The character is in Sanskrit, and it appears to have been given by *Vueyulludeva*, a petty Chief on the banks of the Nurbudda and a dependant of *A-juy-upaldeva* on the 13th day of the bright half of *Kartick*, in the year 1231, (A. D. 1174), to record that a village named *Alluveegamb* was granted on the 12th of the bright half of *Kartick* in the same year, on the occasion of performing the ceremony of *Oodyapun*, (consequent on the fast observed by *Vueyulludeva* on the 11th of the bright half of *Kartick*) for the purpose of feeding fifty Brahmins daily.

ORIGINAL COMMUNICATIONS.

On *Foraminifera*, their organization and the existence of their fossilized remains on the S. E. Coast of Arabia, in Sindh, Kutch, and in Khattiyawar, by H. J. Carter, Esq. Assistant Surgeon, Bombay Establishment. Communicated by the Author.*

Bows of the Ancients.—Dr. Buist stated that on consulting *Rees's Cyclopaedia* he found that the author of the article on the subject of Bows of the Ancients, had observed that the Scythian Bow by ancient authors had been compared to the Greek *Sigma*. The writer of the article mentions that the *Sigma* alluded to must be that of the ancient form of the letter which resembles our C. This Dr. Buist conceived to be a mistake and that the *Sigma* intended was the common Greek Σ , the form of which the Lahore bows (exhibited by Dr. Buist) so nearly resembled, and therefore, that the Scythian bow must, like the Indian bows, have been made, not of one but of several pieces of wood.

A letter from Government was read thanking the Society for its suggestions respecting the inquiries which should be made previous to commencing the Antiquarian Researches on this side of India, contemplated by the Hon'ble the Court of Directors; also intimating that they would be recommended for the sanction of the Supreme Government of India.

A letter from the Visconte de Kerckhove, President of the Academy of Archæology of Belgium, dated Antwerp, 29th April 1847, expressive of the desire of that Academy to become more intimately connected with the Bombay Branch of the Royal Asiatic Society, and proposing that the names of three members of the latter should be forwarded to him for ad-

* See Art. XII. of this No.

mission into the Belgian Academy, also in return, that M. Felix Bogaerts, Professor of History, &c. &c. &c., and his son, M. Eugene de Kerckhove, Doctor of Law, &c. &c. &c., should be proposed as members of the Bombay Asiatic Society, and that official intimation should be given to him of his own election, which he had been informed had taken place some months since.

The *Secretary* reported that the proposition respecting the Malcolmson Testimonial, approved of at the last meeting, had been circulated to the Subscribers present in Bombay, and that having received their sanction, it only remained to be adopted by the Society; also that he would recommend that, as the sum subscribed was small, viz.-Rs. 966.10-4, the Society of itself should, out of respect for the memory of their late Secretary, contribute to the testimonial by increasing the sum to Rs. 1000, and by binding the books purchased with it. The proposition was adopted, and the *Secretary's* recommendation sanctioned.

On the motion of Col. Jervis, *Vice-President*, seconded by the *Secretary*, it was resolved that a deputation, consisting of the *President*, *Vice-Presidents*, and *Secretary*, should wait upon the Right Honorable the Governor, Lord Viscount Falkland, for the purpose of soliciting his Lordship to become Patron of the Society.

With reference to the propositions contained in the Visconte de Kerckhove's letter, it was resolved, that a ballot should be held for the gentlemen therein mentioned at the next meeting, and that the three-members of the Bombay Branch of the Royal Asiatic Society who were to be admitted into the Belgian Academy of Archæology in return, should also then be chosen.

Thursday, the 8th of June, 1848.

MEMBERS ELECTED.

Captain E. Baynes, and Captain P. T. French.

HONORARY MEMBERS.

MM. le Visconte de Kerckhove, Eugene de Kerckhove, and Felix Bogaerts.

DONATIONS FOR THE LIBRARY.

1st. Journal of the Indian Archipelago and Eastern Asia, from July 1847 to March 1848, and a copy of the Supplement for December 1847. Presented by Government.

2nd. Copy of a Report, by Lieutenant Keatinge, of a passage made by him down the Nurbudda River from the Falls of Dharee to Mundleysir; and of a passage from Mundleysir to Broach, by Lieutenant Evans. Presented by Government.

PRESENTS FOR THE MUSEUM.

Two portions of an *Ærolite*, sent to the Geographical Society by Captain G. Wingate, were placed on the table by Dr. Buist, Secretary of the Geographical Society, who stated that as Captain Wingate had not yet intimated his wish respecting their ultimate destination, the Geographical Society, though desirous of presenting them to the Asiatic Society's Museum, could only do so for the present conditionally. Capt. Wingate's account of this body will be found in the proceedings of a meeting of the Bombay Geographical Society, held on the 8th inst.

ORIGINAL COMMUNICATION.

On the Composition of the Poorbandar Limestone of Khattiyawar, by H. J. Carter, Esq., Assistant Surgeon, Bombay Establishment. Communicated by the Author.*

In answer to the letter from Government, No. 1895, dated 27th ult. calling the Society's attention to Mr. Secretary Pringle's letter, No. 3698 dated 23rd November 1846, respecting statistical information required by the Hon'ble Court of Directors,—the Secretary was requested to state what had been done by the Society in August last, in endeavouring to take a Census of the Island of Bombay; also the Society's willingness to resume the subject, under the concurrence and support of Government.

With reference to the intimation given in Dr. Stevenson's letter, that a Member of the house of Forbes and Co. had informed him that the friends of the late Dr. Malcolmson in England had expressed a desire to unite with the Society in subscribing the sum of Rs. 1500 for carrying

* See Art. XII. of this No.

into effect the intention of having a *Malcolmson Medal*, for annual distribution,—it was proposed by Dr. Wilson, seconded by Col. Jervis, that in reply,—the Society's resolution with regard to the *Malcolmson Testimonial*, as passed at its last meeting, be made known to the house of Forbes and Co., with the circumstances which induced the Society to depart from its original intention of having a Medal, and its hope that the friends of the late Dr. Malcolmson in England would still contribute the sum proposed, to enable the Society to carry out more effectually that plan, which had finally been determined on as the best to perpetuate the memory of its late Secretary in connexion with the Society.

It was reported that, the deputation appointed at the last meeting had waited upon Lord Falkland, and that his Lordship had been pleased to express himself willing to become Patron of the Society, and to afford it any assistance in his power.

Ancient Coins. Dr. Wilson intimated that Captain Christopher, I. N., had resolved to present the Society with a collection of ancient coins, made by him during his late voyages on the Indus; that he had put them into his hands for arrangement and illustration; and that they would be laid before the next meeting, with a few notes, in which also the Parthian Coin exhibited by Dr. Buist at the last meeting, and others of the same dynasty, procured at Bombay, would be noticed.*

Gypsum. Dr. Buist exhibited a portion of Gypsum which had been roasted, powdered, and cast, and after having been exposed to the rain, had presented an appearance of returning to a crystalline form.

Thursday, the 13th of July, 1848.

MEMBERS ELECTED.

Captain C. Whitelock, Dr. J. H. Wilmot, and the Rev. J. Glasgow.

DONATIONS FOR THE LIBRARY.

1. "A Catechism on the Currency," by T. P. Thompson. Presented by the Author.

* See Art. X. of this No.

2. Journal of the Indian Archipelago and Eastern Asia, No. IV. Vol. II. for April 1848. Presented by Government.
3. Twenty-four volumes of works in German, Sanskrit, Arabic, and Latin. Presented by Mr. Kœnig, of Bonn.

ORIGINAL COMMUNICATIONS.

1. A transcript in Balbodh of fac-similes of two copper tablets found in the city of Oojein, with an English version. Communicated by Government. Fac-similes of these plates were forwarded in a letter No. 1610, dated November 21st, 1847, to the Society's address, from R. N. C. Hamilton, Esq., Resident at Indore.

2. A description, with drawings, of a new genus of plants of the order Anacardieæ, named by the author Glycyarpus. By N. A. Dalzell, Esq. Communicated by the Secretary.*

This plant is to be found in the neighbourhood of Mahabuleshwar and the Goa jungles. Contrary to the family to which it belongs, the fruit of this genus, which, according to the author, consists of a black shining drupe, about the size of a french bean, appears to be not only harmless in its nature, but much sought after for its sweet and agreeable qualities. In the Goa districts it bears the name of Ansale.

3. Dr. Wilson, on behalf of Captain Christopher. I. N., presented to the Society a collection of ancient coins made by that gentleman during his late voyages of research and experiment on the Indus. These coins had been assorted and arranged by Dr. Wilson. A great number of them belong to the Bactrian and Indo-Scythian and Kanauj dynasties, including one of Heliocles, one of Azes, nine of Soter Megas, seven of the Kadphises group, ten of the Kanerki, fourteen of the Kanauj or ancient Hindee series, eleven not yet identified, but of which something may be made, and twenty one much defaced. There were also 121, with Arabic and Persian characters, which had not yet been examined. On the most remarkable of these coins, and the Parthian coin lately exhibited by Dr. Buist, and some specimens from Dr. Wilson's own collection, some notes were read by Dr. Wilson, which will appear in the next number of the Society's Journal. A continuation of his paper was promised, should anything of novelty or interest be discovered on a further study of Captain Christopher's valuable gatherings.

* See Art. VI. of this No.

With reference to Government letter No. 2486, dated 11th July 1848, and its accompaniments, conveying a request to the Society that it would favor his Lordship in Council with any information that could be obtained on twenty silver coins forwarded therewith, which had been taken from a parcel of 397 discovered by a ryot on digging up the foundation of an old house in the village of Sunganeshwar, in the collectorate of Rutnagherry, specimens of which his Lordship in Council would be happy to present to the Society; it was resolved—that they should be submitted to Dr. Wilson for examination, with a request that Dr. Wilson would favor the Society with the result of his enquiries concerning them, at his convenience.

Thursday, the 10th of August, 1848.

MEMBERS ELECTED.

Munmohundass Davidass, Esq., was admitted a member without ballot, by virtue of his belonging to the Home Society.

DONATIONS FOR THE LIBRARY.

1st. "Indische Alterthumskunde" Von Christian Lassen. Presented by the Author.

2nd. Journal of the Indian Archipelago and Eastern Asia, No. II. Vol. V. for May 1848, and Supplement to No. VI. of Vol. I. Presented by Government.

3rd. Ditto. Nos., IV., V., VI., for 1848, and Supplement to No. VI., of Vol. I. Presented by the Editors.

PRESENTS FOR THE MUSEUM.

1st. A portion of black shale from the neighbourhood of the Sluices in the island of Bombay, containing the remains of a small species of Frog (*Rana pusilla*), so named by Professor Owen in his description of this batracholite in the Quarterly Journal of the Geological Society, No. II. Presented by H. Coneybeare, Esq.

2nd. Specimens of several kinds of Nummulites from the neighbourhood of Shikarpoor. Presented by Dr. Malcolmson.

The *Secretary* stated, that Dr. Malcolmson's present of Nummulites from the neighbourhood of Shikarpoor in Sindh was most acceptable. The collection although small was complete ; it contained perfect specimens of several kinds of both large and small Nummulites, which might be identified with others in the museum most common to the Nummulitic formation of Egypt, and also with those which the *Secretary* himself had collected on the south-east coast of Arabia, where, in certain localities, a formation characterized by the same fossils in great abundance might be observed to exist.

With reference to the Government letter No. 2805, dated the 31st ultimo, conveying a request that the Society would appoint the Commission, proposed in its letter of the 15th of April last, for obtaining authentic information relative to the number and situation of all the Monuments and Cave-Temples of Antiquity in the territories under the Bombay Government, &c., as the Government of India had signified its entire approval of the arrangements suggested by the Society ; — It was resolved,—that the Rev. Dr. Wilson, *Honorary President*; the Rev. Dr. Stevenson, *Vice-President*; C. J. Erskine, Esq. C. S. : Captain Lynch I. N. ; J. Harkness Esq. *Principal of the Elphinstone Institution* ; Venaick Gungadhur Shastree Esq. and the *Secretary*, should be appointed for this purpose.

Thursday, the 14th of September, 1848.

MEMBER ELECTED.

H. Gibb, Esq.

DONATIONS FOR THE LIBRARY.

1st. Journal of the Indian Archipelago and Eastern Asia, No. VII, Vol. II., for July 1848. Presented by the Editors.

2nd. Ditto, Nos. VI, Vol. II, for June 1848. Presented by Government.

3rd. Tables for determining Time to the nearest minute, applicable to the Madras and Southern parts of the Bombay Presidencies, by

William Grant, Esq., Assistant Revenue Surveyor D. P. W. Presented by Government.

4th. *Tohfa-i Jamsheed*, being a translation in Gujerathee of a Persian Treatise entitled *Kileed-i-Danesh*, by Sorabjee Jamsetjee Jejeebhoy, Esq. Presented by the Author.

PRESENTS FOR THE MUSEUM.

A collection of Fresh-water Shells, consisting of *Melania*, *Lymnæa*, *Macra*, and *Planorbis*, from the neighbourhood of Sattara. Presented by H. B. E. Frere, Esq. C. S.

ORIGINAL COMMUNICATION.

"Memorandum regarding an ancient Tank near Sattara, and some Coins found in its embankment, with a Plan of the Tank, and Sketches of the Coins," by H. B. E. Frere, Esq.; C. S. Communicated by the Author.

Mr. Frere's communication was read. The ancient Tank which it describes is on the made road to Poona, about nine miles from Sattara. It is traditionally allowed to have been built in the reign of Raja *Wyrat*, who lived at *Wyratghur*, about the time of *Pandoo*, and ruled that part of the country. Some Gowlee Rajas, who inhabited a village three or four hundred yards from Sewthur,—an account of the remains of which village is contained in the communication,—are also said to have found and used the tank; but that which claims most notice about it, and is most likely to lead to its true history, are the silver coins which are occasionally found about its banks after heavy rains. These are about $\frac{1}{3}$ of an inch in diameter, six only weighing about $24\frac{1}{2}$ grains. They all bear traces of a perforation about the centre, and a crack extending to the circumference, probably owing to their having been formed of a piece of silver wire bent into a circle, which was afterwards flattened into a disk. One face bears a figure, much resembling the popular divinity *Hunamun*, or *Marotee*, but apparently with a bird's head with dots over it; the other, a curvilinear character in the form of a cipher.

Thursday, the 12th October, 1848.

MEMBERS ELECTED.

Commodore J. C. Hawkins, I. N. and J. Vaupell, Esq.

DONATIONS FOR THE LIBRARY.

1. "Zoroastre—Essai Sur La Philosophie Religieuse de la Perse," par M. Joachim Menat. Presented by the Author.
- 2nd. Journal of the Indian Archipelago and Eastern Asia. No. VII. Vol. II. for July 1848. Presented by Government.
- 3rd. Royal Astronomical Society's Proceedings for February, March, and April, 1848, Vol. VIII. Presented by that Society.

ORIGINAL COMMUNICATION.

"On Marathi works composed by the Portuguese;" by the Rev. J. M. Mitchell. Communicated by the Author.*

Thursday, the 23rd of November, 1848.

DONATIONS FOR THE LIBRARY.

1. Journal of the Indian Archipelago and Eastern Asia, No. VIII. Vol. II for August 1848. Presented by Government.
2. Ditto. Presented by the Editors.
3. A copy of the Guzerathee edition of the "Desatir." By Mulla Kakabad bin Muncherjee. Presented by Government.
4. Icones Plantarum Indiæ Orientalis, Part II. Vol. IV., by Robert Wight, Esq., M. D., F. L. S., Surgeon, Madras Establishment. Presented by Government.
5. Quelques Mots a la Memoire de Son. Altesse Royale Le Grand. Duc de Hesse Louis II, par Le Viscomte J. R. L. de Kerckhove. Presented by the Author.
6. Royal Astronomical Society's proceedings for May 12th, 1848, No. 7, vol. VIII. Presented by that Society.

* Sec. Art. XI. of this No.

PRESENTS FOR THE MUSEUM.

1. Specimens of *Hyalæa tridentata* and *Janthina* from the Indian Ocean. By Captain Kempthorne, I. N.
2. A collection of Ancient Greek and Roman Coins from Thebes. By ditto.

ORIGINAL COMMUNICATION.

"Observations on the Grammatical Structure of the Indian Languages;" by the Rev. J. Stevenson, D. D. Communicated by the Author.*

The Secretary reported that in accordance with the resolution of the Society passed at its Monthly Meeting held on the 10th of February last, a handsome Tomb had been erected over the remains of the late Major-General Vans Kennedy. It is situated in the western part of the burial ground of Back-Bay close to the sea-wall.

ANNIVERSARY MEETING.

Monday, the 27th of November, 1848.

MEMBER ELECTED.

W. Courtney, Esq.

DONATION FOR THE LIBRARY.

A raised Map of the Holy Land. By the Rev. Dr. J. Wilson, *Honorary President*.

The Meeting proceeded to the election of the *Committee of Management*, the *Museum Committee*, and *Auditors* for the ensuing year,—the *President*, *Vice-Presidents*, and *Secretary*, remaining in office, agreeably to the rules of the Society.

For the *Committee of Management*, were elected,—Professor John Harkness; C. J. Erskine, Esq.; S. S. Dickinson, Esq.; Rev. George Cook; Henry Young, Esq.; Major J. Holland; C. Morehead, Esq., M. D.; Captain Lynch, I. N.; William Howard, Esq.; and John Scott, Esq.

* See Art. VII. of this No.

For the *Museum Committee*,—The Rev. G. Pigott ; H. J. Carter Esq. ; C. J. Erskine, Esq. ; H. Coneybeare, Esq. ; Lieut. C. W. Montriou ; and W. C. Coles, Esq., M. D.

For the *Auditors*,—Colonel G. Moore, and A. Spens, Esq, C. S.



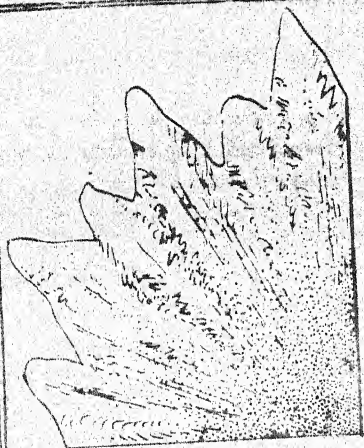


Fig. 1.

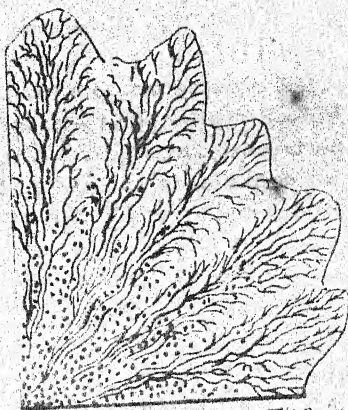


Fig. 2.

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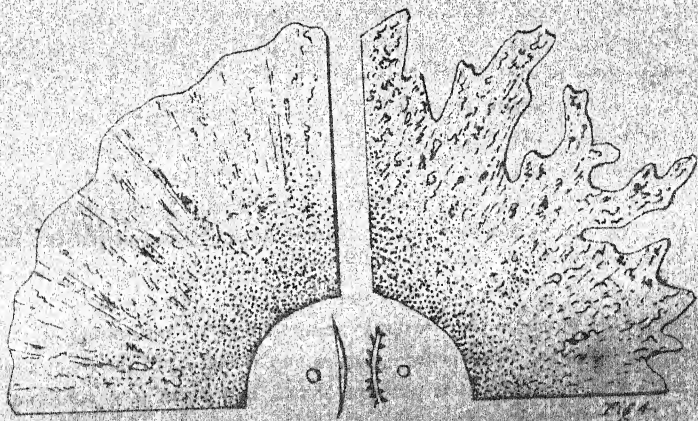


Fig. 3.

Fig. 4.

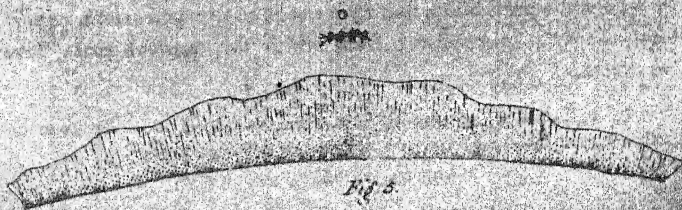


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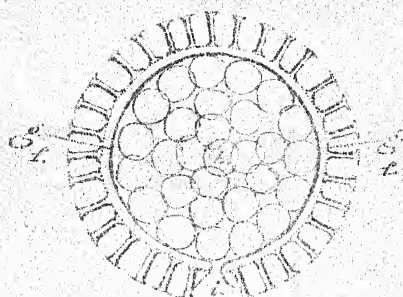
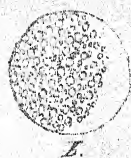


Fig 1.

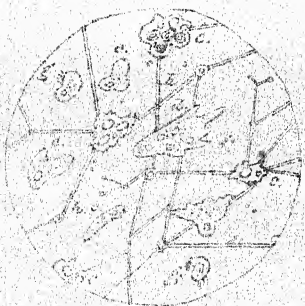
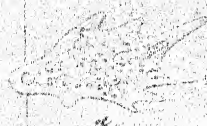


Fig 2.

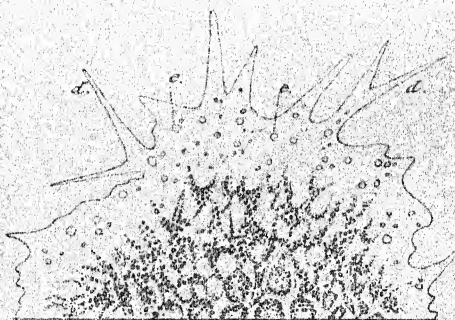
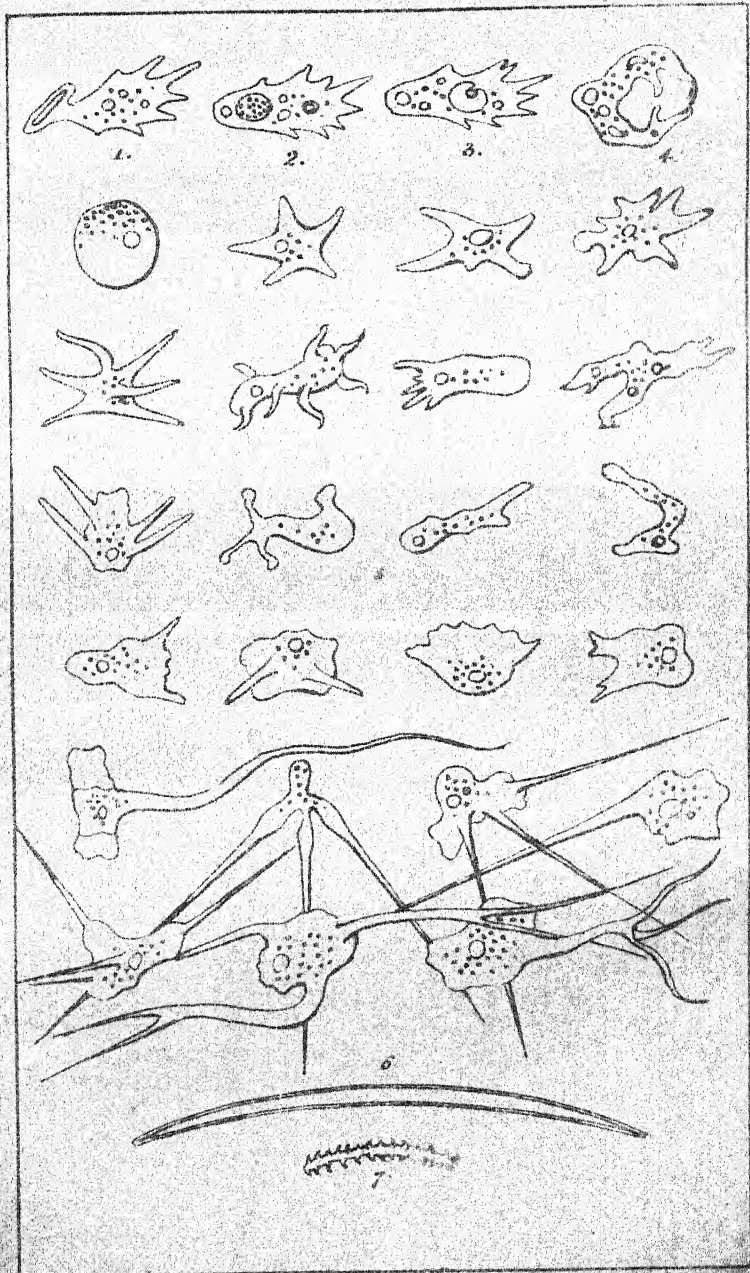


Fig 3.







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VOL. III.
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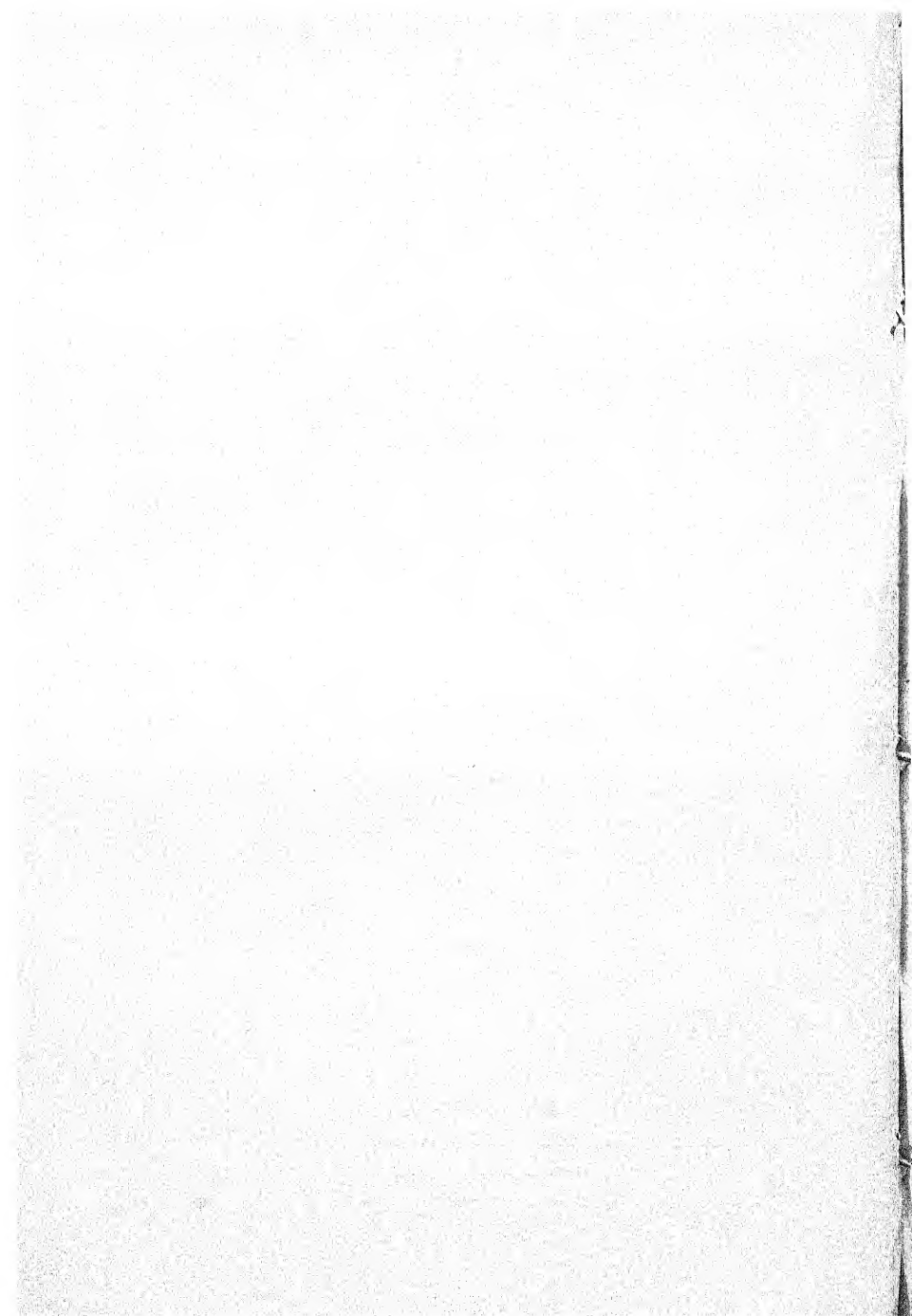
PART II.

DECEMBER 1848 TO NOVEMBER 1850.

Quot rami tot arbores.

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JOURNAL
OF THE
BOMBAY BRANCH
OF THE
ROYAL ASIATIC SOCIETY.

JANUARY, 1850.

ART. I.—*Observations on the Grammatical Structure of the Vernacular Languages of India.* BY THE REV. DR. STEVENSON.

No. 2.

THE INDEFINITE ARTICLE.

It has by many been taken for granted that none of the Vernacular languages of India have any thing corresponding to the Article, for no better reason apparently, than because there is no Article in the Sanscrit. Yet in Clarkson's Gujaráthí, (*a.*) Campbell's Telugu, (*b.*) and Lambrick's Singhalese, (*c.*) Grammars; in Hunter's Hindostání, (*d.*) Molesworth's Maráthí, (*e.*) Candy's English and Maráthí, (*f.*) Ram Komul's English and Bengáli, (*g.*) Garrett's Canarese, (*h.*) and Rottler's Tamil, (*i.*) Dictionaries, as well as in other authorities, the numeral adjective corresponding to *one*, like the French *un* and the Turkish *bir*, is stated to have occasionally the character and power of an Indefinite Article.

(*a.*) p. 13. (*b.*) p. 42. (*c.*) p. 113. (*d.*) under the word یک (*e.*) under एक No. 3. (*f.*) under A. (*g.*) under A. (*h.*) p. 147. (*i.*) Vol. I. p. 287.

As this indefinite use of the numeral in the Vernacular Dialects of India, differs very considerably from the Indefinite Article of European languages, it may be necessary to notice briefly in what the difference consists. In European languages the Article is used to point out one individual of a species indefinitely, without any emphasis. In the Indian tongues there is emphasis joined to the want of definiteness. To express unemphatically and indefinitely that there is one individual in the mind of the speaker, the Hindus use simply the Noun without any addition. Thus "he gave me a rupee", is simply in Hindostānī, *Usne mujhe rupaiya diya* (उसने मुझे रूपया दिया). To use *ek* before *rupaiya*, in this sentence would make it mean, "he gave me one rupee." When *एक* is used indefinitely in India, it has frequently the power of the English Article with the emphatic word *certain* affixed; thus, *एक सिंह* means not "a lion," but "a certain lion;" and in Marathi *एका समयों* means on a certain occasion, though in this case the idioms of the two languages nearly coalesce, and we could properly translate the phrase by the words, "once on a time," where the emphasis is given by the adverb once. Another use of *एक* is to express emphatically any one of a multitude; thus in Marathi, a person who had got some urgent business on his hands might say, (*एका गड्याला बोलाव*) *ekā gadyāla bolāwa*, "call a servant," meaning any one you can find. These or similar uses of the word will be found, according to the authorities above referred to, in the other languages of India, though I am unable from personal experience to speak more particularly on the subject. It will be admitted that the French *un* and the German *ein*, used for the Indefinite Article, are nothing more than the first number in the series of numerals, modified and adapted to a particular purpose; and I think the same may be said of the English *a*, which in the form of *an* was anciently written *ane*, a word still used for *one* in the Lowland Scottish dialect. If the French and Spanish and Italian *un*, used as an article, be undoubtedly derived from the Latin *unus*, we are furnished with an illustration of an important principle in such enquiries; namely, that the construction of a language is much more stable than its Vocabulary. There is no article in the Latin language, and no such use of *unus* as of *un* in these tongues, yet the latter is most certainly derived from the former. So

there is no such use of एक in the Sanscrit as that above described, though the word is pure Sanscrit. This idiom, then, belongs to the Vernacular languages of India, all of which as well as that of Ceylon it pervades, and therefore must have belonged to an aboriginal dialect spoken throughout the whole country before the language of the population was influenced by the Brahmáical tongue. The substitution of *ek* in the Northern languages for the *ondu* of the Southern, changes merely the word without affecting the idiom. The classic word has found insertion into the aboriginal language in the same manner as many an old baronial castle still retains its mediæval configuration, though one battlement after another has had its old crumbling stones replaced by fresh materials; or as in the classic land of Greece, or amid Egypt's massive monuments, the traveller descries some Turkish castle, constructed after a barbaric model, repaired with stones which once adorned a Parthenon or Osirian temple, and sees where the rough plastering has fallen off, the chaste sculpture of some disciple of Phidias, or the pictured hieroglyphics of Egyptian sages.

THE DEFINITE ARTICLE.

In the same manner that the word, which expresses the numeral *one* is frequently used for an Indefinite Article, there is a particular particle that when affixed to a word supplies the place of a Definite Article. As in the former case, the laws of this article differ very considerably from those of the Definite Article in European languages, and to explain its full import is attended with a difficulty similar to that which we noticed in reference to the Indefinite Article. It at one time corresponds to an emphasis placed on the Personal Pronouns in the English, where frequently the demonstrative *that* may be substituted as *wuñi chor hai*, "He is the thief," or "that is the thief." At another time it points back to some one mentioned in the preceding context, and may with the pronoun to which it is attached, be rendered by "the same;" as *wuñi sákshi ke liye aya*. "The same came for the purpose of giving evidence."

This particle in Hindustání and Bengálí is ए (i.); in Tamil, Cana-

rese and Telugu it assumes the form of ए, (e) ; in Gujaráthí and Marwári ज, (j) ; in Maráthí च, (ch).

It is true that we have something of an analogical particle in the एवम्, of the Sanscrit, which may be used much in the same way as the abovementioned particles in the vernacular tongues, and some of them seem easily derivable from this very word. But others of them cannot be traced back to a Sanscrit origin, and are probably parts of the aboriginal Indian language, as the ज of the Gujaráthí and the च of the Maráthí, which have no connection in sense with the च of the Sanscrit. The inference in this case is not however so strong, and I would not lay so much stress on it as in the case of the use of *ek* for an Indefinite Article.

THE NOUN.

In as many of the Vernacular languages of India as have been subjected to Grammatical analysis, it has been usual to reckon seven cases besides the Vocative, as is done in Sanscrit ; though it might have been as easy to make out twice seven in most of them. A more rational practice has, however, been adopted in reference to some of the languages belonging to the northern family, and the genius of the particular tongue under analysis observed and followed, as is always done in respect of the Numbers, which are universally acknowledged to be but two, and of the genders, in reference to which some of the more northerly have only a Masculine and Feminine, as the Hindustání, which in this particular agrees with the French ; others, like the Gujaráthí and Maráthí, have three Genders, depending a good deal on termination, as in Sanscrit and the ancient European languages ; while the southern family with the Oriya follows the law of nature, as is done in the Turkish and English.

What are called cases in the languages of antiquity, are apparently nothing more than the noun with particles, which when separated have no meaning, affixed or prefixed to nouns to point out their various relations to other words in the sentence, serving the same purpose that Prepositions do in the modern languages of Europe. That purpose is served in the Indian Vernacular tongues chiefly by what have been

called Post-positions, because they are affixed to nouns. The only difference then between a Post-position and the sign of a case, will be that the one is by itself significant, while the other is not. In the Latin we have something in the shape of a Post-position affixed to a Pronoun, in *nobiscum*, when the particle *cum* is affixed to the sign of the case. If *bis* the sign of the Ablative, were elided and the word written *nocum*, we should have an exact parallel to the construction of many of what are called cases in the modern Indian languages. Indeed, even in the Latin language itself there are three Sanscrit cases included in what is called the Ablative, viz. the proper Ablative, expressed by the preposition *de* (from), the Locative by *in*, and the Instrumental by *ab* (by) : and the Greeks include all these and the Dative also, under one case. In all the languages of India, the terminations for all the declensions are the same with a few rare and trifling exceptions, and in the same manner, except in about two instances in some of the languages, the terminations for the plural are the same as those for the singular. In both of those points they differ greatly from the Sanscrit and ancient languages of Europe, and agree with our modern languages and with the Turkish. It is true that, as in the Turkish *ler* is introduced before the terminations of the singular to distinguish between the two numbers, so in Tamil *gal* (gal), in the Canarese *galu* (galu), and in the Telingee *lu* (lu), are inserted. This is not improbably an abbreviation of the Sanscrit word सकल (all), which in Tamil becomes सगल and in Marathi सगळे. In the Bengali, in the same awkward way दिग (dig), except in the Nominative, is inserted, probably a corruption of the Sanscrit आदो. This word is often employed where we would use, &c. and in Marathi in the middle of a word it becomes आदीक, from which to आदीग, and last of all to दिग, the transition is sufficiently easy. In most of the northern languages, however, except in the Nominative plural, there is a nasal sound introduced before the termination to mark the plural, instead of the abovementioned syllables. Yet in all, the scheme is identical, and unlike any thing found elsewhere except in the Turkish and Tartar dialects.

In turning to the consideration of the particular cases, we may begin with the Accusative or Objective case, which in the Sanscrit Grammars follows the Nominative. In reference to the Nominative

itself, there is no place for remark ; since in the northern family there is usually no termination that marks it, and the terminations which are used in the southern tongues, vary in every particular language. In the Hindustáni, Gujaráthí, Maráthí, and Singhalese, there is no separate termination for the Accusative. In the Panjábí, it is formed by affixing (ॐ) *nu* as in the Telugu, which is almost the same as the Canarese (ॐ) *nnu*. In the Tamil, the sign of this case is (ऐ) *ai*, closely allied to the Turkish (ای) *í*.

What however is especially to be remarked, as shewing a family resemblance running through them all, is the rule that the Nominative is used for the Objective, in nouns when we speak of inanimate things, and for animate beings the Objective, in those languages that have a separate form for this case ; while in the others the Dative supplies its place. So singular a rule as this, especially in the use of the Nominative for the Objective even when the latter case exists in the language, could not have been the result of accident, and yet the reason is so recondite that we cannot suppose it occurring to the framers of a number of different and discordant dialects. This I esteem one of the strongest proofs of an aboriginal vein running through the Vernacular Indian tongues ; for the rule is a constituent part of them all, and as such is noticed in all the Grammars. “ The Instrumental case formed in Panjábí, Hindostáni and Maráthí by (ने) *ne*, in Bengálí by (কে) *ke*, in Gujaráthí by (ए) *e*, all most probably corruptions from the Sanscrit or Pracrit, follows next in order. This case in the southern tongues is formed by different affixes.

The next case, the Dative, seems in all the Vernacular tongues to be purely an aboriginal inflexion, and can be traced from Cape Comorin to the Himalaya. In the Tamil and Oriya, we have (कु) *ku*, which is also frequently used in Hindi, though (को) *ko* be more common. In Bengálí, के *ke* is properly speaking the sign of the Objective, yet it is frequently used instead of the Dative. (खो) *kho* in the language of the Bodo a Himalayan tribe, is in the same predicament. In the Canarese for the Dative we have sometimes गे (*ge*), and sometimes के (*ke*) ; in Telugu (కి, కు, and को,) *ki*, *ku* and *ko*. The Marathi Dative is (ला) *lá*, for a parallel to which we are obliged to pass the Himalayas to Tibet, in the language of which (ला) *la* is the sign of the Dative ; or cross

the Indus to Afghanistán, for the Pashtu Pronouns have (*la*) *la* the same as in Maráthí, leading us to the Syro-Arabic prefix *la*. The common Pashtu termination for nouns is (*ta*) *ta*, the same as in Singhalese. Whatever may be said of these three last partial agreements, though still sufficiently striking, I think no one acquainted with the principles of philology can venture to affirm that the first mentioned could have existed without an original connection.

The Ablative case, which comes next in order, seems in the northern family clearly derived from the Sanscrit, from the (*tah*) *tah*, of which may be derived the Bengálí (*ite*) *ite*, the Gujaráthí (*thi*) *thi*, and the Panjábí (*te*) *te*, and even the Hindostání (*se*) *se*. The Maráthí (*un*) *un* may be derived from the *u* of the Pracrit (*a*). The Tamil (*al*) *al* does not influence either the northern tongues or the Canarese and Telinga, which make out the case by means of Post-positions.

For the Genetive the Gujaráthí *nu* (*nu*) is probably connected with the Tamil *in* (*in*), with (*na*) *na* frequently used in Canarese, and with the old Marathi (*cheni*) *cheni*. From the Telinga (*yokka*) *yokka* by contraction may be derived the (*ka*) *ka* of the Hindostani, the (*tsa*) *tsa* of the Maráthí, the (*ja*) *ja* of the Sindhi, and the (*ge*) *ge* of the Singhalese, as the principal letters have all a great analogy with one another. It is a singular fact in regard to the northern family, that the Genetive is a regular Adjective agreeing in gender, number and case with the Substantive with which it is connected. This, however, is not the case in the southern family. Such are the principal things worthy of notice that have occurred to me in reference to the Noun and its inflexions in the Vernacular languages of India.

α. See Kalpa sutra, Appendix p. 141.

ART. II.—*Memoranda on Mud Craters in the district of Luss.*—By CAPTAIN A. C. ROBERTSON, H. M. 8th, Regt.
(Communicated by CAPT. S. V. W. HART.)

The following observations were made by Capt. Robertson in the months of August and September 1849 when he visited these extraordinary Craters in the district of Luss. They had been seen before by Capt. S. V. W. Hart, and those called the "Rama Chandra Koops" had been described by that officer in his interesting "Pilgrimage to Hinglaj," published in the Transactions of the Geographical Society of Bombay for 1839-40. Vol. III. p. 77.

Capt. Robertson has divided his observations into sections headed "Groups (of craters) Nos. I, II, III, &c.", which will facilitate the reader in finding them in the annexed plan. (Plate I.) Ed.

GROUP NO. I.

I visited this Group of Craters on the 11th of September. It is situated in the range of the lesser Hara Mountains * opposite to the Kattewara wells, from which the Craters are distant about six miles. At this point of the Hara range the continuity of the sandstone ridges is broken on their eastern side, by the occurrence of an immense mass of whitish clay. The mass consists of two distinct hills rising with a steep ascent from a great sheet of clay, which descends with an extremely gentle slope, about $1\frac{1}{2}$ miles in length, to the foot of the mountains.

In several places sandstone rocks protrude through this sheet, thus apparently indicating that the clay is super-imposed on the sandstone. Seen from the plain, the sheet has the appearance of being divided into channels by the sandstone rocks. It seems as if a stream of liquid mud, descending from above in voluminous masses, had filled the hollows and covered the lower part of the sandstone ridges, leaving nothing visible but their highest rocks.

* Of this range Cap. Hart states:—"Although their height is not very great, yet they present a singularly wild appearance, from their rising at once from the plain at an angle of forty-five degrees on their eastern side, with a greater slope to the west-ward, and being totally bare of all verdure. They are composed of sandstone, and their summits are broken into rugged peaks of the most fantastic shapes." Ed.

The surface of the sheet of clay is honey-combed like that of the detached hills or Koops. It is also intersected by numerous deep fissures and chasms.

From the largest of these fissures, (which penetrates into the heart of the mass and winds round the base of the southern hill), there issues a stream of water which is perfectly clear and very inviting in appearance, but which, on being tasted, is found to be so salt as to be quite undrinkable. This stream, after leaving the fissure, flows through a ravine formed by the low sandstone ridges, and after leaving the ravine, is quickly absorbed in the sandy desert, which stretches from the Haras to the Pooralee. Several kinds of shrubs and plants flourish in the ravine; and on the banks of the stream a white salt is deposited. A yellow sediment is also found in the higher part of its course, where the stream traverses the mud fissures.

The northern Hill, which, in ascending the sloping sheet of clay, lies on the right hand, has a round unbroken outline and on its summit an uneven plateau of considerable extent, presenting several circular depressions which no doubt mark the sites of craters, formerly filled with liquid mud, but we were unable to discover any active mud fountain at present existing on the plateau.

The left hand or southern Hill, differs very much from the other in appearance and conformation. It is broken into numerous peaks and ridges and its whole surface is covered with clusters of the remarkable sugar loaf protuberances which form the characteristic feature of the Dowlaghur range.

A group of active mud craters is situated on, and in the vicinity of a sharp pointed cone on the north-eastern side of this Hill, and on the summit of this cone (which is extremely difficult to reach) is a perfectly flat, circular area about 50 or 60 paces in diameter, having on its western side an elliptical basin which measures 48 feet by 30.

This basin is filled with mud of the consistency of a thick paste. In one part of the mud was a small liquid spot from which gas escaped by large bubbles, rising at intervals to the surface, in the same manner as in the "Chandra Koops," of which hereafter. At a point at the foot of the cone, where a narrow ravine or fissure which separates

two ridges terminates, is another basin of a circular form, and about 40 feet in diameter, and filled with very liquid mud.

On the left side of the ravine at the height of about 70 feet from the bottom is a small hole from which trickles a little stream of muddy water. This hole is inaccessible and I was unable to see its interior; but I distinctly heard within it the noise of ebullitions, caused by the escape of gas. A small stream of muddy water descends by the ravine leading from the foot of the cone to the great fissure, from whence issues the salt stream that flows through the valley at the foot of the Hills.

From the edge of the crater at the summit of the cone the Katterwarra wells bear nearly east, (N. 86° , $30'$ E.). The Koops in the Great Hara range bear nearly west, (N. 266° E.).

The height of the crater above the plain I should estimate to be certainly not less than 700 feet.

GROUP, No. II.

THE "RAMA CHANDRA KOOPS."

In this Group* I include the three cones visited by the Agwas † and their followers.

Excepting the record of a few measurements I have nothing to add to the accurate and graphic description of these cones given in Captain Hart's "Pilgrimage to Hinglaj."

The description there given of their appearance and of the phenomena they present, with the exception of two very trifling differences, corresponds exactly with our observations.‡

* Visited 24, 25, 26, 27th August and 9th September.

† "Spiritual Guides of the Pilgrims." Capt. Hart, loc. cit.

‡ "Crossing the Phor river in which water is occasionally found in pools, and can always be procured by digging, we halted at the Tilook Pooree wells, where an extensive marsh was formed by the late rain. One koss from them in a westerly direction, three hills of extremely light coloured earth rise abruptly from the plain. That in the centre is about four hundred feet in height, of a conical form with the apex flattened and discoloured; its southern and western sides rather precipitous, but with a more gradual slope on the others. It is connected with a small one of the same form, but not more than half its size, by a causeway some fifty paces in length. The third bears the appearance of the cone having been depressed and broken, and

When we visited the Koops, the two basins in the crater of the detached cone were not separated by a neck of land.

They communicated with one another and both were filled with mud of the consistence of a thick paste. In the north-western part of the circumference of the large basin and in the south-western part of the small one, the surface of the mud was depressed and covered by pools of clear water.

We did not observe any spring of water issuing from the *northern* side of the Hill, but a stream exactly of the character of the rill described in the "Pilgrimage" oozed from the *eastern* slope. It trickled for a short distance, moistening the clay and converting it into a narrow belt of mud. If this be the same spring as the one noticed

covers a greater extent of ground than the others. All three towards their bases are indented with numerous fissures and cavities, which run far into their interior. Their sides are streaked with channels as if from water having flowed down them. On ascending to the summit of the highest one, I observed a basin of liquid mud about one hundred paces in circumference, occupying its entire crest. Near the southern edge, at intervals of a quarter of a minute, a few small bubbles appeared on the surface; that part of the mass was then gently heaved up, and a jet of liquid mud, about a foot in diameter, rose to that height. Another heave followed, and three jets rose; but the third time only two. They were not of sufficient magnitude to disturb the whole surface, the mud of which at a distance from the irruption was of a thicker consistency than where it took place. The pathway around the edge was slippery and unsafe, from its being quite saturated with moisture, which gives the top a dark coloured appearance. On the southern side, a channel a few feet in breadth was quite wet from the irruption having recently flowed down it. I was told that every "Monday" the jets rise with greater rapidity than at other times, and then only did any of the mud ooze out of the basin. The entire coating of the hill appears to be composed of this slime baked by the sun to hardness. No stones are to be found on it, but near the base, I picked up a few pieces of quartz."

"Crossing the ridge which connect this hill with the least of the three, I climbed up its rather steep side. In height or compass it is not half the magnitude of its neighbour, and its basin, which is full of the same liquid mud, cannot be more than twenty paces in diameter. The edge is so narrow and broken that I did not attempt to walk round it. One jet only rose on its surface, and it is not more than an inch in height or breadth. But a very small portion of the mass was disturbed by its action, and although the plain below bore evident marks of having been once deluged to a short distance with its stream, no irruption had apparently taken place for some years. At times the surface of this pool sinks almost to the level of the plain; at others it rises so as to overflow its basin, but generally it remains in the

in the "Pilgrimage," it is evident that it is not of so ephemeral a character as its appearance indicated.

As the "Pilgrimage" does not notice the derivation or meaning of the term Koop, it may be worth while to mention that by referring to Shakespear's Dictionary it will be found that, کوپ is a word of Sanscrit origin and signifies "a well."

During our stay at the Kooops we made the following measurements :—

Height of the highest cone above the level of the plain :—

By first set of observations..... 320 feet 8 inches.

.. second..... do. 307 — 1 —

.. third..... do..... 309 — 6 —

Mean of the three sets.. 312 — 5 —

Diameter of the crater of the highest

Koop..... 57 — 6 —

Do..... do. of the smallest

Koop..... 59 — 4 —

quiescent state in which I saw it. Two years ago it was many feet below the edge of the crest."

"On my way to the third hill, I passed over a flat of a few hundred yards which divides it from the other two. Its sides are much more furrowed with fissures than theirs are, although their depth is less, and its crest is more extended, and its height about two hundred feet. On reaching the summit I observed a large circular cavity some fifty paces in diameter, in which were two distinct pools of unequal size divided by a mound of earth; one containing liquid mud, and the other *clear* water. The surface of the former was slightly agitated by about a dozen small jets which bubbled up at intervals; but in the latter one alone was occasionally discernible. A space of a few yards extends on three sides from the outer crust to the edge of the cavity, which is about fifty feet above the level of the pools. Their sides are scarped and uneven. On descending the northern face, I remarked a small stream of clear water flowing from one of the fissures into the plain. It had evidently only been running a few hours. The mud and water of all the pools is salt. A fourth hill, situated close to the great range of Haras, and distant from the rest upwards of six miles, was pointed out as having a similar cavity to that last described. Its colour is the same, and although the surface is more rounded, its summit appears broken. I regretted not having time to visit it."

"The name given to these singular productions of nature is the "Kooops of Raja Rama Chandra," by which appellation they are known to all tribes."—Capt. Hart; loc. cit.

Transverse diameter of the smaller basins of the detached Koop	112 feet 7 inches.
Transverse diameter of the larger basins of do.	181 — 0 —
Longitudinal diameter of the crater including both bases	231 — 2 —
Greatest height of the edge of the crater above the mud	32 — 8 —

During the days we remained at the Koops the mud in the craters of the two connected cones was slightly elevated above the rims of the craters, and at several places slightly overflowed, trickling in small quantities down the sides of both cones.

The 27th August, one of the days we spent at the Koops, was a Monday.* On that day we did not observe any unusual activity in the escape of the gas, nor did there seem to be any increase in the quantity of the mud which was trickling from the crater.

On the 8th of September, I in two minutes counted seven ebullitions in the mud of the crater of the large Koop. The intervals between three successive ebullitions were 10, 15 and 45 seconds.

GROUP, No. III.

This Group† is the one situated close to the Great Hara range.

On the evening of the ninth, having staid behind the rest of the party in order to complete a sketch of the Tilook Pooree (Chandra) Koops, I lost my way in the dark, and thus missed the opportunity of personally inspecting them.

The Group of craters is situated on the summit of a detached ridge of clay, which rises from the plain at a short distance from the Great Hara range of mountains. The ridge is of an irregular oblong shape, and forms a mass of very considerable dimensions.

Captain Anderson, who on the morning of the 10th. ascended the ridge, reported that the ascent was steep but that the surface was tolerably smooth, being less broken than that of the detached Tilook Pooree (Chandra) Koop. The ascent occupied an hour and 16 minutes, the decent about 35 minutes. He estimated the height of the ridge

* See Note p. 11.

† Visited 10th September.

at not less than 800 feet. On the top he found an extensive plateau, on which several tamarisk trees were growing. Some of them were in a state of decay, others were in a flourishing condition.

The group of craters or fountains consisted of three small circular basins, which measured respectively 20, 18, and 9 inches in diameter.

The mud in the second was extremely liquid, and seemed well suited from its fineness for the purposes of plastic art.

Besides these three basins, there was a small oval aperture, the largest diameter of which did not exceed half an inch.

A small quantity of clear water was discharged from it, which escaped by a long smooth groove of about the same diameter as that of a common sized cedar pencil.

GROUP, No. IV.

CALLED BY THE NATIVES "KAMAL-I-PAT."

The craters of this Group are situated on the summits of two low mounds, which rise from a flat at the distance of about a mile from the sea.

The rock of Gorab-i-Sung is about two miles from the largest mound. From the crater of this mound the rock bears nearly south-west, (N. 220° 30' E). I estimate the height of this mound to be about 18 or 20 feet. On the summit is a circular area about 60 paces in diameter. A small cone about 5 feet in height rises near the centre of the area; from this point to the edge of the mound there is on every side a slight fall.

The small cone is perforated by two apertures. In one of them we heard the gas bubbling beneath us, but in neither aperture did the mud rise to the surface. On the edge of the area extending in a semi-circle from S.S.W. to N.N.E. is a cluster of 49 papillæ, each having an aperture about an inch in diameter. Gas escaped from all of these, and from some of them a small quantity of mud.

About 200 yards to the westward of this mound is a smaller mound, about 12 or 15 feet in height.

The area on its summit is 16 paces long and 5 paces broad.

At its eastern end is a small basin about 3 feet in diameter from

which gas was disengaged in greater quantities than from any other crater which we visited. In the space of a single minute we reckoned 31 bubbles, each about a foot in diameter.

Close to this basin is a smaller one of about two feet in diameter in which the ebullition was also very active.

At the opposite or north-western extremity of the ridge is another basin $3\frac{1}{2}$ feet in diameter. It is filled with mud and water, but I did not observe any ebullition in it. Near it are two minute apertures of about an inch in diameter from both of which gas was escaping. About 300 yards from the large mound in a north-easterly direction, are two small mounds about 10 feet high and ten or twelve paces in diameter at the summit. A still more diminutive mound is situated close to the base of the large one on its south-eastern side. On none of the three is there any aperture, basin or crater.

The liquid mud in the basins of this group is of a light blue colour, and seems precisely similar to that found in the other craters.

But the colour of the mounds on which the basins are situated, is a dark reddish brown, whereas all the other craters are found in masses of very light coloured whitish clay.

GROUPS, Nos. V. & VI.

These two Groups are situated in the Dowlaghur range. Owing to its great extent we were unable to explore this singular region minutely, or to ascertain its limits with accuracy. As a rough approximation I should say that its length is 20 or 23 miles, and that its breadth varies from 3 to 5 miles.

We ascertained trigonometrically the height of two of the peaks situated in one of the extensive ridges; one of these peaks we found to be 542 and the other 712 feet, above the Aghor river.

From the exterior ridges there is a gradual rise towards the centre of the mass. The central peaks cannot therefore be much less than 800 or 900 feet above the Aghor river. About 10 miles from the mouth of the Aghor river the range terminates in the sea; from this point it stretches inland in a direction parallel to that of the Hara mountains. Between the sandstone cliffs of the Haras and the clay ridges of Dowlaghur, there intervenes a strip of perfectly level

land, about two miles in breadth; both ridges rise abruptly from this plain, and the clay and sandstone formations are not on this side connected by any lateral offshoots.

On the opposite side, the intermediate space between Dowlaghur and the Hinglaj mountains appears more broken, and the clay and sandstone formations are probably blended at the junction of these lateral offshoots. I had not, however, an opportunity of exploring this side of Dowlaghur, nor was it in my power to examine the north-eastern extremity of the range, so as to ascertain its extent and the manner in which it terminates.

Along the line of its intersection by the Aghor river, I observed several detached masses in which layers of clay and sandstone occur alternately, in some places arranged vertically, in others horizontally, and in others in inclined planes.

At the extremity next the sea also, the ridges are partly composed of sandstone strata. With the exception of one or two elevated spots in the central parts of the mass, where clusters of rounded knolls occur, the whole region of Dowlaghur is broken into steep, narrow ridges. The surface of these ridges is entirely covered by innumerable clusters of sugar-loaf shaped protuberances, which the Agwa told me are regarded by the pilgrims as natural *lings*. These protuberances vary from 10 to 25, or even 30 feet in height. They are connected together at their bases, and many of the larger ones are surrounded by groups of smaller ones, which spring from the sides of the central mass. These ridges are extremely difficult to surmount, owing to this peculiar conformation of their surface. Many of them are altogether inaccessible. The groups of craters are situated in the central parts of the mass. In their vicinity, the surface, though extremely rough, is destitute of the conical protuberances which characterize the rest of the region. The areas of these clear spaces are of considerable extent; each is occupied by a cluster of large rounded knolls, on the summits of which, the craters are situated. The apertures are in some places level with the ground, in others, at the summits of small cones, varying very considerably in their dimensions, some being merely small papillæ of soft clay, others being conical mounds 12 or 15 feet in height and 5 or 6 in diameter at their summits.

The cones appear to have been formed by the gradual accretion of the clay discharged from their orifices.

The appearance of these smooth knolls surmounted by groups of conical mounds, and each mound in a state of growth, immediately suggested to me a notion, which whether well founded or not, I am inclined to think would be the first impression of every observer. It seemed to me very probable that the singular sugar loaf conformation of the surface of the neighbouring ridges may have been produced by a process similar to that now going on upon the smooth knolls, and that every one of the innumerable protuberances with which the ridges are covered, may have been at some former period the site of a fountain or volcano of mud. Admitting this theory to be a plausible account of the manner in which the protuberances were formed, the question would occur, whether the formative process was gradual or simultaneous,—whether the active fountains in times past have always been as at the present time, few in number, and confined in their action to narrow spaces,—or, whether by some vast eruptive effort, countless fountains were opened, and throughout the whole extent of the region, all the protuberances on all the ridges were at once thrust out.

The region is so extensive and the rugged tracts lying in its centre have been so little explored by the country people, that we could neither ascertain by observation nor learn from report, in how many places groups of active fountains are still to be found. We visited two other groups, and two other places were pointed out to us where similar groups were said to exist, but which places the natives told us were almost inaccessible.

We visited one of the groups on the 3rd and 4th of September.

The approach to it is by a ravine, the mouth of which is situated at the point where the Aghor river first touches the base of the Dowlaghur range. The path is extremely difficult, being interrupted by numerous chasms, fissures and perpendicular breaks. In some places it leads through natural tunnels, in others, over chasms by narrow arches of clay of very moderate thickness.

About $\frac{3}{4}$ of an hour is the time necessary to climb to the top of the ravine.

At the top are five or six rounded knolls, covering a tract of land

of an irregular oval figure, about $3\frac{1}{2}$ miles in length and $1\frac{1}{2}$ miles in breadth.

A little to the east of the ravine, on the summit of one of the knolls, is a rugged mass of clay about eight feet high and five or six feet in diameter, which at a little distance is exactly like the stump of a tree. Gas escapes and mud oozes from an aperture in the side of the mass. There is at present no aperture on the summit but formerly there must have been one.

The mud discharged from it has accumulated around the top of the stump in lumps and ridges like the lumps of tallow which accumulate around the wick of a candle exposed to a current of air.

Near the base of the mass are several small protuberances a few inches in height, each having a small aperture in its summit from which mud and gas is discharged.

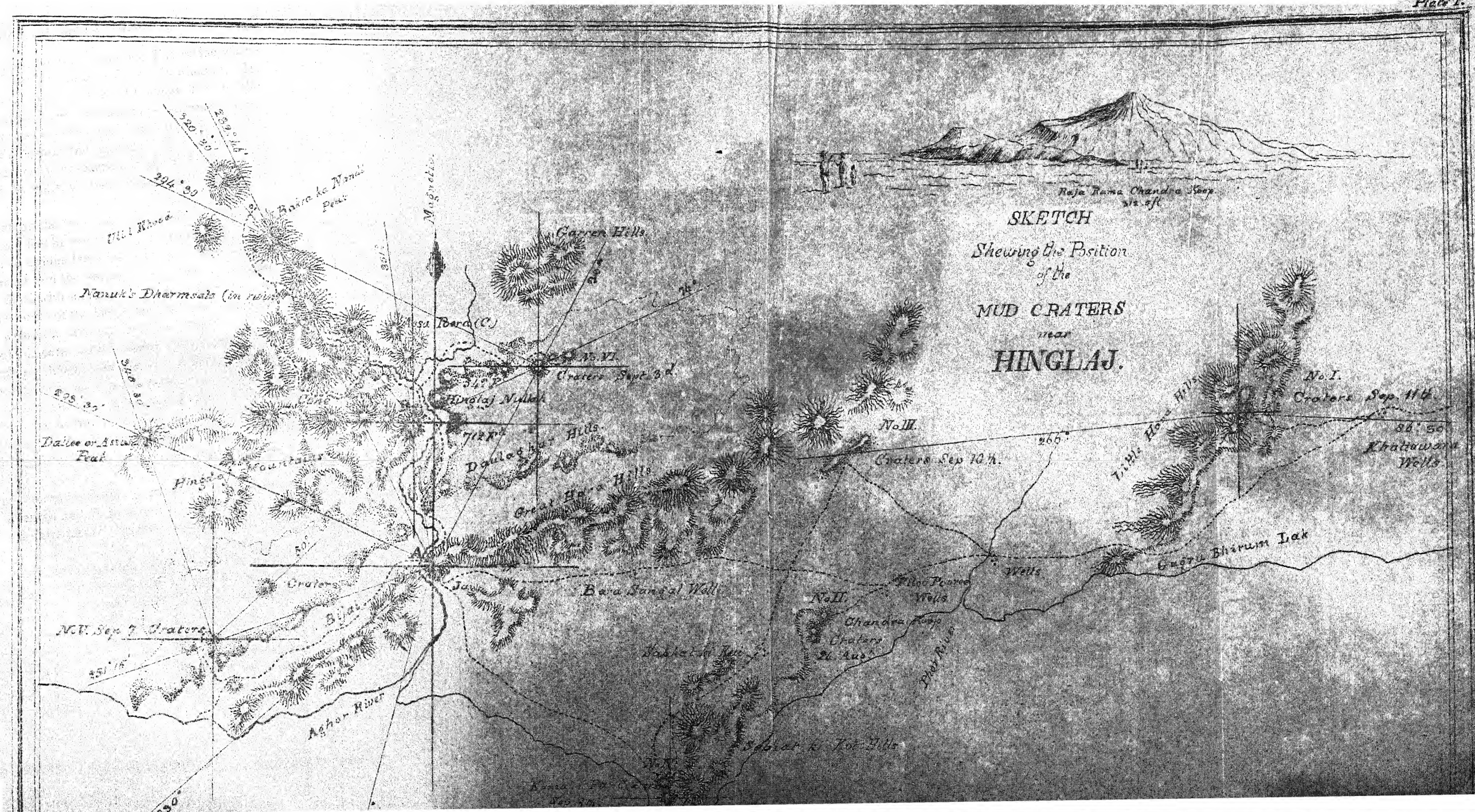
On the summit of another eminence still farther to the westward, is a basin 30 feet in diameter and nearly level with the ground. It is filled with liquid mud. Around it are a number of small cones similar to those on the other hills.

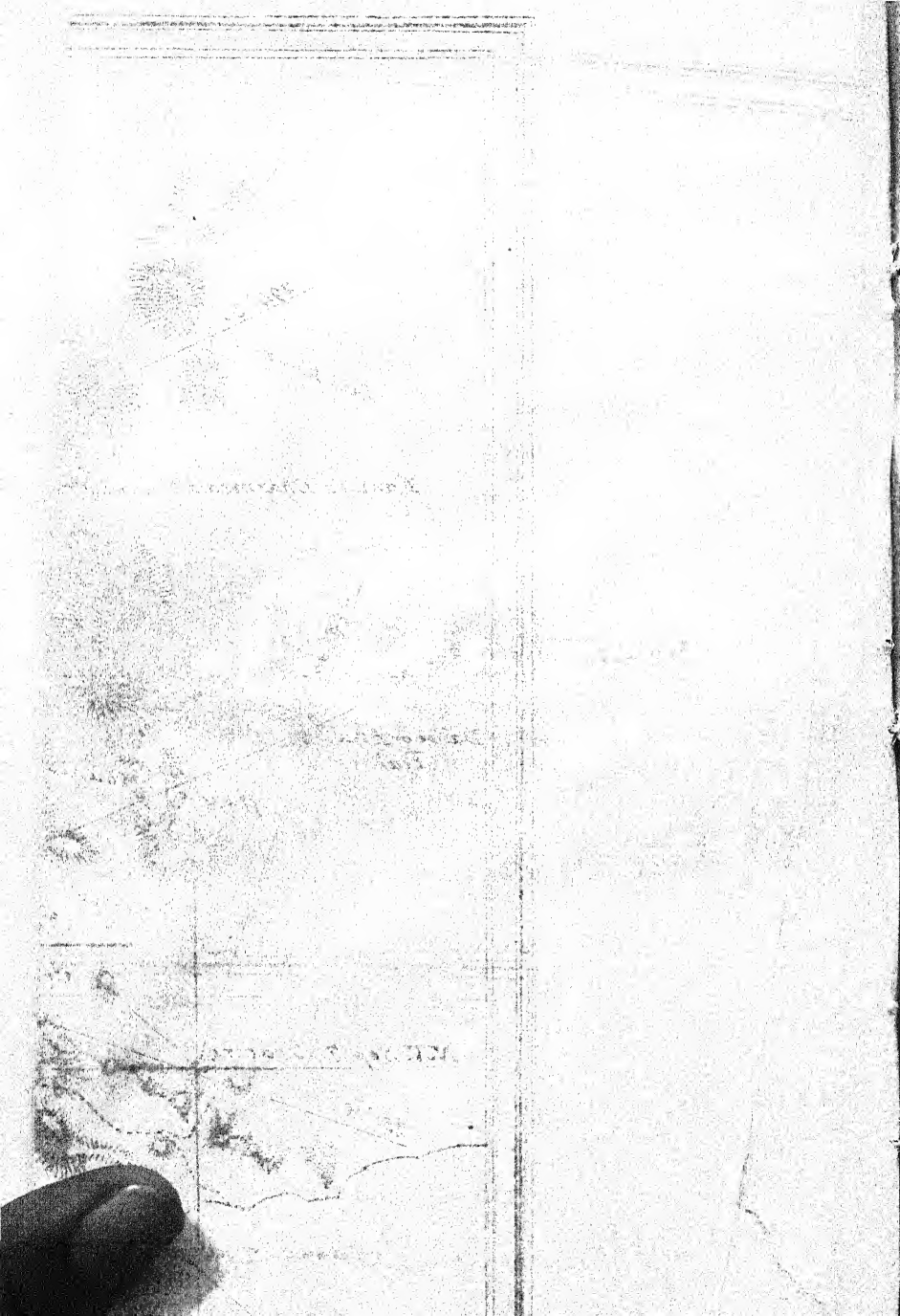
Still proceeding westward at the distance of about half a mile, on the summit of another knoll, is a cluster of nine or ten cones, from 8 to 12 feet in height. The apertures of two of the cones have been closed, but on the summit of each of the others is a basin of liquid mud, about 5 or 6 feet in diameter from which at intervals the gas escapes in bubbles in the usual manner.

Besides the large cones there are at this place a number of small ones of a few inches in height. There are also numerous small apertures level with the surface. From one of these, water of a yellow tinge is discharged, and the clay in the vicinity of this aperture is discoloured, apparently by ferruginous matter.

In order to ascertain if the gas discharged from these apertures was inflammable we held a lighted stick over one of them, in which the ebullition was considerable ; no effect was produced.

At the time of our visit both the gas and mud were discharged in small quantities from the fountains of this group, but the appearance of the surface indicated that at some former period considerable masses of mud had been poured from the summits of the knolls.





We visited the other group on the 7th September. The ravine which leads to it, penetrates the south-western side of Dowlaghur. Its mouth is about 7 miles from the Aghor river and about 4 from the sea. The ravine has evidently been the bed of a stream of mud. Beneath the surface a tunnel has been scooped out, probably by the action of water; the crust which roofs the tunnel is everywhere perforated by fissures and in several places large portions of it have given way, interrupting the track by gulfs, which it is extremely difficult to pass.

Near the top of the ravine on the right hand side as you ascend, is a steep cone about a hundred feet in height, which abuts on the ravine, and forms the termination of a ridge lying between the main ravine and one of its lateral branches; on the summit of the cone is a basin about 30 feet in diameter filled with soft mud. At several places the mud was trickling over the edges of the basin and gas was escaping from small circular spots where the mud was in a fluid state.

Not far from the foot of this cone, a little higher up the ravine, is a small mound about 18 inches in height, situated in a cleft of the ridge which forms the left side of the ravine. In this mound is an oblong aperture about a foot in length and six inches in breadth. In this aperture at intervals of from one to two minutes there was a violent ebullition accompanied by a copious discharge of mud. At the top of the ravine are two large rounded knolls one on the right and the other on the left.

On the top of the knoll, on the left hand as you ascend, is an oblong basin about 12 paces in length and 5 in breadth. In this basin the ebullitions are languid and unfrequent. No mud is discharged from it.

On the summit of the other knoll is a ridge six or eight feet in height, about thirty paces in length and 3 or 4 feet in breadth at the summit. Along the top of this ridge are distributed numerous small apertures discharging gas and mud; the largest of these apertures is at the western extremity of the ridge, it is about 3 feet in diameter. About 300 paces from this ridge on a level piece of ground at the foot of the knoll, is a circular basin 26 feet in diameter. The edge of this basin is level with the surface of the ground; the basin is filled with ex-

tremely liquid mud, the ebullition is very languid ; about 150 paces to the north-west of this basin, is another aperture. It is only a few inches in diameter but more mud is discharged from it than from any of the other fountains which we visited.

In a hollow near the orifice which I sounded with a stick upwards of three feet of mud had collected.

From the ridge at the top of the knoll at the distance of about 2 miles and bearing N. 50,° E. we observed a steep lofty cone, on the summit of which we were told was a large basin of mud, but as this cone was separated from us by several difficult ridges we did not attempt to visit it.*

ART. III.—*Some Account of the Bhatti Kāvya*. By the REV.
P. ANDERSON. M. A.

There is a poem which is better known in the Bengal Presidency than in the West of India, but with the name at least of which the Pandits even here are well acquainted. I refer to the *Bhatti Kāvya*, or poem of Bhatti, which, I believe, has never been translated into English nor in any way been brought to the knowledge of European readers. In the Government College at Calcutta it is read by students who have been engaged three years with Grammar, but does not form a part of the course which is followed in the Sanscrit College of Pūna. It claims our attention, not from its poetic merits, but from the peculiarity of its object. It is intended to illustrate the Grammatical rules of Panini and the Kaumudi. At the same time it is a connected history of the well known adventures of Rāma and the groundwork of the story is the same as that of the different Rāmāyanas. The poetry of such a work must necessarily be constrained and formal, but it is real-

* Note.—Of two specimens of mud which have been forwarded to me from these Craters, one is marly, the other purely argillaceous ; both are extremely fine, light, powerfully plastic, and of a pale grey color.

Captain Robertson also forwarded a shark's tooth which had been taken from the mud ; it is broken off at the shoulders, but is $1\frac{1}{2}$ inch wide there now, and $1\frac{1}{2}$ inch long, with serrated edges.—Ed.

ly surprising that it should possess so many beauties as it does. It would be a severe tax upon European learning to write a poem which should supersede all the examples of the Eton grammar and should in itself illustrate the application of its rules, and we should never expect from it so much poetry as is really to be found in the *Bhatti Kāvya*.

By way of imparting an idea of it to English readers, I shall take a sketch of the two first books, as they are expounded by the commentators Jayamangala and Bharata. To the uninitiated these commentaries are extremely obscure on account of the technicalities of native grammar. We should be very much mistaken, if we were to suppose that Hindu grammarians condescended to any thing so simple and comprehensive as an ordinary rule of syntax. The plan was this. A teacher stood up and delivered himself thus—I give the first rule in the second section of Panini's first book—

“Gáṅkutádibhyonindit.”

The pupil very probably understood as much of this and no more than does the reader. But then the teacher would proceed to expound his text thus, “Gán”—that means the root “ín” for which “gá” is substituted, and “kutádi” means the class of roots which are conjugated like “*kut*”, and ‘Gáṅkutádibhyo’ signifies the inflexions of these roots which are ‘*anindit*’, that is, although they have not the affix *nit*, or a silent ‘*n*’, are inflected as though they had.

The enigmatical words which the teacher thus pronounces are styled a *Sūtra*, and Panini's grammar is composed of no less than 3996 of them, all made up of the driest technicalities. Now the *Bhatti Kāvya* is designed to exemplify these, and the writer who could under such circumstances construct any figures of imagination, must, to say the least, have had great ingenuity.

The poem at once opens with the narrative which serves for an illustration of the various uses of the third preterite or indefinite tense, thus:—

Once the Eternal One designing
Great blessings on our earth to bring,
To human form himself consigning
For his own father chose a king ;

That friend of gods was Dasharatha named,
 For virtues rare, and for his conquests famed,
 He read the Scriptures, with exactness nice,
 Brought to the Ever-young his sacrifice, ⁽¹⁾
 His father's manes with holy rites appeased,
 His living kinsmen by his kindness pleased, ⁽²⁾
 Delighting in all royal virtues knew,
 How foes to conquer and his passions too; ⁽³⁾
 Exalted as the Thunderer of the sky, ⁽⁴⁾
 He scattered wealth like showers from on high,
 In archery above all men renowned,
 Save the three-eyed one ⁽⁵⁾ he no master owned,
 Like mystic fires which consecrate the hearth, ⁽⁶⁾
 So he brought heavenly blessings on our earth,
 So he by Brahmans was attended well,
 So pleased the gods who in Elysium dwell;
 Equal in wide spread fame to Indra great,
 He lived in splendour like to Indra's state, ⁽⁷⁾
 There in Ayodhya, city ever bright,
 With Brahmans learning for unfailing light.
 That glorious town the world's great sire.

(1) The ever-young—literally, they who exist in the third state or youth, meaning the gods.

(2) This passage contains an allusion to the five great sacrifices which according to Manu are, 1. Sacred study. 2. Libations to the manes. 3. Burnt offerings to the gods. 4. Offerings to all creatures. 5. Hospitality.

(3) Compare Prov : xvi. 32. Literally it is, he had conquered the six vices, which are lust, wrath, covetousness, bewilderment, pride, and envy.

(4) Indra king of the inferior gods in Swerga.

(5) The three-eyed one—Siva as represented in the great triad of Elephanta.

(6) In the Raghuvansa, v. 25. Raghu addresses Kanta thus, "O thou, who like a fourth fire lodgest in my honoured dwelling of fires."

(7) The description of Indra's heaven is enchanting, at least for a Hindu; its pillars are composed of diamonds; its palaces, beds and ottomans of gold, ornamented with jasper, chrysolite, sapphire, emeralds and other precious stones; it surpasses twelve suns in splendour; it is surrounded by gardens in which the tree of paradise flowers, the fragrance of which extends eight hundred miles; bright lakes, refreshing breezes and a temperate climate combine to render it perfect; music and dancing entertain the inhabitants; neither sickness, nor sorrow, nor sudden death are there, neither do they hunger nor thirst any more.—Ward on the Hindus, vol : i. and see the account of Vaikuntha or Vishnu's heaven in the Bhagavat Purana, Book iii. c. 15.

Pronounced the limit e'en of his desire ;
 Beaming with gems aloft it seemed to mock
 Indra's resplendent city of the rock ; (1)
 Its towering halls with pearls and diamonds bright
 As those far mansions on Summera's height,
 Where tender nymphs amidst their native skies
 Smile in their beauty for immortals' eyes.

The poem then gives an account of the triple marriage of the king Dasharatha, of the ceremonies which were performed with a view of procuring from the gods the gift of offspring, of the birth of Rāma and his three brothers, of their education under the superintendence of Vashishtha and of the excellent qualities which they developed.

“ Till known by all for sound and brilliant parts,
 The rising warriors lived in people's hearts.”

At that time a certain sage whose religious abstraction had been impeded by the jealous interference of demons, applied for assistance to the king Dasharatha, who at first hesitated until reminded that, according to the legal code, the Brahman and military castes are bound to render mutual assistance (2). The struggle in the aged father's breast between duty and affection is depicted with much pathos and truth. At last he consents to send his favourite son Rāma, who with his younger brother Lakshmana, accompanies the sage and commences a series of adventures in knight errantry.

“ See the lion of great Raghu's race,
 Eager demons to lay low ;
 Variegated thongs his hands encase,
 And he grasps the dreaded bow.

(1) On the summit of Meru is the vast city of Brahmā extending fourteen thousand leagues and renowned in heaven, and around it in the cardinal points and the intermediate quarters are situated the stately cities of Indra. Vishnu Purāna B. ii. c. 2.

Where Himakoot the holy mount on high,
 From mid earth rising in mid heaven
 Shines in its glory like the throne of Even.”—Curse of Kehama.

(2) There is probably a reference to Manu, Book ix. c. 322. “ The military class cannot prosper without the sacerdotal, nor can the sacerdotal be raised without the military ; both classes by cordial union, are exalted in this world and the next” ; a highly politic rule which the military and clerical orders of our Christian community would do well to observe.

Weep not Ayodhya's virgins, soothe your pain,
 Pray that in triumph he may come again.
 Hear the crowded city's mingled hum ;
 Brahmans high their voices raise,
 And blessings pour ; others beat the drum,
 Others softly flute his praise ;
 His throbbing arm speaks omens good ; he sees
 E'en birds good wishes chaunting from the trees."

The second book is entitled " The Marriage with Sita," and thus commences:—

Leaving the city gates behind him far
 He saw the Autumn ⁽¹⁾—season fit for war ; ⁽²⁾
 O'er all the country wide in soft moon light
 Trees, lakes, and streams were beautiful and bright.
 In all their loveliness red lotus beds
 Shone as the light itself, and o'er their heads
 The black bees hung in swarms like clouds of smoke
 O'er places where fierce flames have newly broke ;
 And as the heaving waters gently laved
 Their broad leaves, to and fro they slowly waved. ⁽³⁾
 From river banks the swollen waters tore
 Their shady groves and all their rustic store ;
 The mallows from the angry banks seemed sneering,
 And their sweet rivals the white lilies jeering.
 O'er the sad willows the first dawn was breaking,
 A gale the hoar frosts melting drops was shaking
 From their leaflets points, whilst the wood birds' throats
 Poured from their graceful boughs complaining notes ;

(1) The commentator explains that here the cause is placed for its effects.

(2) Compare 2 Sam. xi. i. ; i. Chron. xx. i. " The time when kings go out to battle." This passage is added from the commentary.

(3) There is a fine passage in Southey's " Curse of Kehama," which reminds us of this, and shews the versatility of the poet's genius in describing oriental scenery.

" Around the lotus stem,

It rippled and the sacred flowers that crown
 The lakelet with their roseate beauty, ride,
 In easy waving rocked from side to side ;
 And as the wind upheaves
 Their broad and buoyant weight, the glossy leaves,
 Flap on the twinkling waters up and down."

'Twas thus those willows wept, and told the flowers
Their sorrows for the loss of moonlit hours.
The woods and lakes by bright eyed flow'rets graced,
The flow'rets by the honey bees embraced,
Each for the other filled with mutual love
With smiles each other's charms to heighten strove ;
Save a white lily which waved to and fro
As the first winds of morn began to blow,
When a gay bee came tinged from lilies red,
Seemed like a jealous spouse who turns her head,
And from her truant lord withdraws in shame
When he comes perfumed by some rival dame.
The chased deer paused to hear beneath the trees,
With rapture the low chorus of the bees ;
The hunter too regardless of his prey,
To hear wild swans absorbed in song must stay.
A hill top which a drifted cloud had rest,
And robbed of all the moisture which was left,
In snowy beauty—like the mountain king—⁽¹⁾
And gushing river-springs, was glittering.
The lion in his damp and leafy den,
Roaring, was wroth when echo roared again,
Thinking he heard another forest king.
He gathered up his limbs, prepared to spring.

The prince beheld the lily beds with glee,
And heard the drowsy murmurs of the bee,
Stayed the white lily's fragrance to inhale,
Wafted by its lost paramour the gale.
Off graceful creepers various buds he stripped,
The cooling waters of the river sipped,
Then smiling on that beautiful retreat,
He sought with eagerness a rustic seat.
Not far from him the eastern waters lay,
Enamelled by the beams of opening day,
The ground by show'rs of golden rays made bright,
Was flooded to a sea of liquid light.
O'er scattered patches that so trim appeared,
When from the wilderness the grass was cleared,
There he beheld the ripening grain crops lie

(1) The Himavata or snowy range.

Distilling love and ravishing the eye,
 He saw the huts where simple shepherds stay,
 A race adorned with nature's beauty they,
 Domestic beings who few troubles knew,
 Who rendered to the king his legal revenue. (1)
 Erect and graceful milkmaids in his sight,
 Invited trust and filled him with delight;
 One ornament—true modesty—was theirs,
 That brightest jewel which fair woman wears.
 Maidens, with movements like the graceful turns,
 Which dancers use, were working at their churns,
 As up and down they moved he gazed with pleasure,
 And heard their churning handles beat the measure
 His admiration rose, as bounding near,
 Swifter than wind, passed herds of timid deer,
 Their variegated hides adorned the plains.
 Decked in all rural beauty by the rains.
 Where the white lotus's and foam spread o'er
 The waters sleeping near the sandy shore,
 There water birds in lines of jasmine white
 Concealed from view the wanderer's ear delight.
 No lake was there which charming lilies did not grace,
 No lilies which the humming bees did not embrace,
 No bees which were not round and round with murmurs wheeling.
 No murmurs which were not the mind and senses stealing.

ART. IV.—*A Descriptive list of Rock-Specimens from Maskat in Arabia, Persia, and Babylonia.* Presented to the Society by CAPTAIN T. J. NEWBOLD.

No. 1.—Serpentine, from Maskat.

2. Ditto..... ditto.

3. Light green spotted variety of Serpentine, from Guano Rock near Maskat.

4. Calc-spar, from veins in Serpentine of Maskat. The spar imbeds fragments of the rock, proving the posterior origin of the veins.

(1) That is, as Manu lays down, a sixth or eighth or twelfth part of the produce which the king could legally claim. Manu. vii. 130.

The spar is often blended with magnesian matter derived from the Serpentine ; Steatite, Nephrite, and Sulphate of Lime are commonly found associated with it, and sometimes common salt.

These minerals occur frequently in thin lamellæ, filling seams of the rock almost invisible to the naked eye, penetrating it in every direction, and rendering it friable and unfit generally for building purposes.

Whole masses of Serpentine are often separated at the planes of the more vertical and highly inclined seams, and slide down in avalanches of crumbly fragments to the base. The smooth crystalline, or steatitic surfaces, thus exposed on the rocks left standing, are often of considerable extent. Their white, grey, and whitish green colours exhibit striking contrasts with the prevailing sombre hues of the Serpentine, viz. black, deep green, rusty, and purplish brown.

5. Conglomerate, overlying the Serpentine, interstratified with grit and sandstone, and underlying sandstone and nummulitic limestone, from the range supporting the elevated deserts of Arabia at the back of Maskat ; imbeds no pebbles of Serpentine but many rolled fragments of white quartz, quartzite, and some pale green chlorite sandstone.*

6. Reddish ferruginous sandstone overlying No. 5.

7. Nummulitic limestone overlying Nos. 5 and 6, all slightly disturbed by the last upward movement of the Serpentine.

8. Recent conglomerate now in process of formation on the sea-beach of S. Arabia, consisting of lime and sand cementing fragments of corals, marine shells and black pebbles. The specimen is from Mattarah near Maskat.

9. Dark brown ferruginous rock from the island of Hormuz, Persian Gulf. This rock passes into a pure hematitic iron ore, and occasionally imbeds specular iron ore and iron pyrites. It is sometimes whitened by an incrustation of common salt.

* Mr. Carter, to whom I showed a pebble of the chlorite sandstone from this conglomerate, tells me he thinks he has seen the rock itself *in situ*, underlying the limestone at Ras Sajar midway between Ras al Had and Aden. This, as well as those rocks from which the white quartz pebbles and pink quartzite have been derived, are doubtless anterior to the conglomerate, superimposed beds of sandstones and nummulitic and other limestones about Maskat.

10. White friable rock, slightly dotted with greyish and reddish spots, exhibiting a few, small, angular bits of quartz and glassy felspar.

These minerals have resisted the process of disintegration more successfully than the substance of the rock, which appears to have been originally a trachytic variety of No. 11.

11. Like Nos. 9 and 10 from Hormuz. It is a pale blueish grey, highly indurated lava imbedding pale decaying crystals of olivine, and a few of glassy felspar.

The crystals in weathering fall out, leaving cavities which impart a variolated aspect to the surface of the rock.

The middle and southern portions of the island are said to abound in deposits of pure, common salt, which forms an article of commerce and is farmed out by the Imaum of Maskat. The island, as well as the Persian Coast from Minnow and Bunder Abbas to the Sulphur mines of Khamir, nearly opposite the centre of Kishm island, is held by him, on payment of a certain annual sum, to the king of Persia. The salt is, as usual, associated with deposits of crystallized gypsum.

A variety of reddish, brown, and greenish cherts, clays altered apparently by volcanic heat, and earthy and crystallized sulphur are found on the island. Copper pyrites are said to occur.

12. Ferruginous sandstone of the Persian main, from a sandstone ridge intervening between the city of Bunder Abbas (Gombroon), and the lofty mountains of Gebel Shemil, and the Koh i Ghinnow which constitute part of the great mountain rampart of Southern Persia. The sandstone forming the subordinate ridge, has generally much less iron in its composition than the specimen now sent. It is usually of a loose, friable texture, and imbeds here and there fragments of marine shells of existing species. It is overlaid by a loose, pebble conglomerate, evidently an ancient sea beach; and rests on marls often saliferous, which in their turn often repose on sandstone.

13. Arenaceous shell-limestone imbedding existing species of marine shells; from Bassadore.

14. Ditto..... ditto..... from Reshire near Bushire on the Persian main.

15. Indurated Bitumen from the bitumen springs of Nimrúd near Mosul.

16. Indurated Betumen from the vicinity of the flaming springs of Abu Goghuid, between Bagdad and Mosul near the city of Kerkuk, —the ancient Corcyra.

This specimen is more indurated and crystalline, than that from the springs at Nimrūd. The mineral issues in a liquid state, and is the Naft i Siyah, the black Naphta of the Persians. It was used as a cement in the boats and buildings of the ancient Assyrians, Babylonians, and Chaldæans; and by the moderns for much the same purposes. Many of the houses in the towns on the banks of the Tigris and Euphrates still have their foundations protected by bituminous cement from the saline damps, which rise up by capillary attraction from the alluvial soil. It is used in the inside of watercourses, flat terraces of wells &c.; for lining the round basket or Gopher boats still plying on the Tigris and Euphrates as in the time of Herodotus; and for paying the ordinary timber built boats. It is also used to burn in lamps in a few places, as at Kerkuk where my Kurdish host supplied me every night with a large antique shaped terra cotta lamp fed with bitumen, and supplied a roll of cotton rag for a wick. Medicinally the bitumen is applied as a balsam to sore backs, &c. of camels, mules, &c.

The bitumen, like lignite, often contains fragments of bituminized reeds, grasses, and leaves, indicating an almost similar vegetable origin. Both the specimens of indurated bitumen now sent, sink in water. Their colour is brownish black.

17. Arragonite, from the marine limestone of the bitumen springs near Abu Goghuid.

18. Diluvial gravel, from the plain of Babylonia. This gravel is composed of small rounded pebbles, few of which exceed an inch and a half in length, much rolled, and of the hardest portions of the rocks from which they have been washed. A few angular fragments of gypsum are occasionally seen among them, but this rock is generally on, or near, the situs of the gravel beds, and distinctly underlying them. A large number of pebbles examined by Mr. Loftus on the Perso Turkish Boundary Commission and myself, consisted of:—

1st. Quartz,—white, reddish, and yellowish.

2nd. Flinty slate,—gray to black. Some varieties of the black pass into Lydian stone, and have a shining, semiconchoidal fracture.

3rd. Chert,—of many tints from light grey to almost black and green, approaching jade.

4th. Jasper,—chiefly red, impure, also brown and veined.

5th. Agate, (rare)—generally semitransparent.

6th. Flints,—with white and reddish coating.

7th. The most indurated parts of Serpentine rocks.

8th. Waxy silicious limestones,—of various shades, of grey, green, and white; some nearly black. Some varieties approach marble in their semicrystalline structure.

9th. Quartzite sandstone,—brown and pinkish.

10th. Brown, indurated clays passing into jasper.

11th. Angular fragments of gypsum, evidently not transported from a great distance.

12th. Two pebbles of finely grained granite, greenish gray; composed of quartz, mica, and a little greenish felspar.

We found also among the gravel a few slightly rolled fragments of black indurated bitumen.

The above mentioned specimens we found in the principal gravel bed of the Babylonian plain near Misrákchi Khan, north of the site of ancient Babylon. In another of these gravel beds at Akkar-koof, the supposed site of the Accad of Genesis [one of the cities of Nimrod, and cotemporary with Babel, Erech and Caluch], we found, in addition to pebbles similar to those just enumerated, two small pebbles of a light, yellowish brown nummulitic limestone, and also one of a coralline limestone; also one of a pinkish granite consisting of quartz and felspar with a little iron, and two pebbles of porphyry and hornblende rock.

Per centage of the principal pebbles in the gravel bed of Akkar-koof, taken by Mr. Loftus and myself:—

Quartz,—white, milky, reddish and yellowish	30
Chert, flint, jasper, flinty slate, indurated clays.....	40
Limestone, quartzite standstone, and indurated varieties of	
Serpentine	27
Nummulitic and coralline limestone	1
Granite, porphyry, and hornblende rock	2
Total....	<hr/> 100 <hr/>

I have been thus particular in the examination of these gravel beds of Babylonia, inasmuch as I consider them as intimately connected with the most interesting geological phenomena on historic record,—namely the Deluge of Scripture.

The circumstance of some of the oldest cities in the world being partly built either on these gravel beds, and the pebbles themselves in having been employed in their construction, as at Babylon, Nineveh, Accad, &c. proves their antiquity.

2nd. The position of the beds and their extent prove that they are no fluvial deposits.

3rd. Their nearly N. and S. longitudinal axis, and the nature of the pebbles, show that the course of the flood which deposited them rolled from the northward, from the direction of Mt. Ararat, towards the present head of the Persian Gulf, washing fragments from the rocks of the Taurus and Kurdistan, and grinding their softer materials into the vast, flat, mud deposits which now cover the sea-like plains of Assyria, Babylonia and Chaldæa. In this light brown and grayish mud are blended the component parts of all these rocks, whether calcareous, argillaceous, siliceous, or ferruginous, with a small portion of vegetable and saline matter, into one undistinguishable mass; but we can easily learn, from the fossil and mineral character of the pebbles, the sources from which they were originally transported; and, from their being exclusively of the hardest portions of the parent rocks, we are enabled from their small size and roundness of contour, to estimate with some approach to truth, the distance they have travelled, and the amount of friction they have undergone. In the nummulitic and other limestone, granite, and serpentine pebbles, I distinctly recognize the rocks of the Taurus and Kurdistan. The absence of pebbles of lava or basalt is remarkable; but previous to any speculations being hazarded on this head, further search for them is necessary.

With regard to any theory touching the date of the Deluge deducible from an examination of these deposits, I have only to observe that this must be reserved for a future and better opportunity than is afforded by this “List of Rocks,” already too long and tedious.

19th. Nummulitic limestone, from the vicinity of Shiraz (Persia). It resembles exactly the nummulitic limestone of Arabia, near Mas-kat. Mr. Carter, the learned, and indefatigable Secretary of the Society

has found nummulitic limestone on the island of Maseera, and *Orbitolites* in the cliffs fringing the shore of Southern Arabia between Aden and Maskat. I have traced it from the Lybian desert over Egypt to the opposite or Arabian shore of the Red Sea, and by Maskat and the mountains of Shiraz in Persia, to the banks of the Indus. It has been traced still further to the Eastward by Capt. Vicary and into Cutch by Capt. Grant. It occurs also *in situ* near Mardin in upper Mesopotamia and some of the Sculptures at Nimrúd I observed were chiselled in it. It is there of a light yellowish, brown colour, and compact in texture. I am decidedly of opinion that these nummulitic formations must be referred to the *Supracretaceous* group, and not to the *Cretaceous* series as has been done by some geologists. It is often capped in the deserts of Egypt, Arabia, Persia, and Scinde by loose sandstone and gritty conglomerates imbedding fragments of indurated clays, jaspers and silicified wood. In the lofty ridge of the Bakhtiari mountains between the Persian Gulf and Shiraz, it often contains marine shells of the eocene period.

T. J. N.

ART. V.—*On the Red coloring Matter in the Salt and Salt-pans of Bombay.* By H. J. CARTER, Esq. Assistant Surgeon, Bombay.

I have much pleasure in bringing to the notice of the Society a red substance which is found in some of the Salt-pans of Bombay, and which is sometimes so plentiful in them as to impart a blood red color to the whole of their contents. It is found at the bottom and mixed with the Salt which floats on the surface of the lixivium contained in them.

When this substance is examined under a microscope, it is observed to be composed of minute spherical globules of a light ruby red color, and averaging the 1500th part of an inch in diameter.

These globules, which are found in a state of aggregation, probably adhere for the most part to the crystals of salt, but as that cannot be seen when the latter is in solution, they are then observed adhering to crystals of carbonate of lime, which were previously mixed with the

salt, and in this state may be separated from the salt, and washed and dried.

They consist of a transparent tunic or cell-wall, in which is contained a great number of granules.

The tunic of the globule is colorless and so tenacious as to hold together after having been ruptured and its contents eliminated.

The granules, which vary in diameter from the 19,000th part of an inch to a mere point, are round or ovoid, and of a pink color *en masse*, but colorless when isolated. They are imbedded within the globule, in a transparent mucilage, and occasionally evince a vibratory or monadine motion, both within and without the globule. This motion is most perceptible in the smallest and least in the largest granules.

From this description, I think, there can be no doubt that this globule is the *Hæmatococcus* of Agardh,—the *Protococcus nivalis* of Greville;—and if so, its habitat which has hitherto been considered to be chiefly confined to *eternal snow*,* either in the Arctic Regions or on the tops of mountains, may now be extended to the Torrid Zone.

In addition to Bombay I saw it frequently in the salt-pans on the south eastern coast of Arabia, but neglected to bring away a portion of the salt with me for examination. It is curious that it should be found in profusion both in the coldest and hottest parts of the globe. If we were to judge from analogy in this instance, we might be inclined to say that its predilection is the smooth surfaces of crystals, rather than any thing else,—whether of water, of salt, or indeed, of carbonate of lime. Baron Wrangel obtained it from the surface of limestone rocks; and Captain Carmichael, in greater perfection from the calcareous rocks (than from other parts) on the borders of the lake of Lismore, which were within reach of the occasional inundations.† It is also not a little remarkable that, it should be found living in a cold, which on the one hand almost bids defiance to all organic life, and on the other hand, in a briny fluid which is almost equally destructive to it. Such apparently discordant facts, however, are no doubt in perfect unison with the laws of creation, if we could but understand them.

* Endlicher "*in nive æterna, polari et alpina.*" p. 3, Gen. Plantarum.

† P. C. Vol. xxii. p. 107.

All are aware of the circumstances which have rendered this little organism so notorious, and I need hardly add the general opinion of its being considered one of the lowest forms of vegetable life; that is, —a simple cell—“ which lives *for* itself and *by* itself; and is dependent upon nothing but a due supply of nutriment, and the appropriate stimuli, for the continuance of its growth and for the due performance of all its functions until its term of life is expired.”*

There are some remarks however, connected with *Hamatococcus* which I should not omit to mention here, for they tend to cast a doubt over the position this little organism holds in the organic world. They are by Agassiz and Vogt,† and by Meyen.‡

Agassiz and Vogt, most carefully examined the red snow in the glacier of the Aar, and stated that the globules of the *Protococcus* were the ova of a rotiferous animalcule called by Ehrenberg, *Philodina roseola*. Dr. Vogt has added that the *Philodina* is found abundantly with the globules of *Protococcus* in several places, and that the latter are observed with the *Philodina*, and to be deposited by it; that they are outside the digestive cavities, because they are not colored by indigo when the *Philodina* is fed with that vegetable matter, and, therefore, that they are connected with the reproductive organs and are the *Philodina's* eggs. That, moreover, as there is a difference in the size of the globules of *Protococcus*, so they accord with the eggs of the *Philodina roseola* which are deposited at different stages of their development.

Meyen, again, has stated that the *Protococcus nivalis* is the *Euglena sanguinea et viridis* of Ehrenberg, and that the reason of its being so often taken for a plant, is, that it naturally passes the greater part of its existence in a passive state, only occasionally under favorable circumstances starting into activity.

Thus it would seem to be still an unsettled question, whether the *Hamatococcus* has reached its last phase of development in its spheroidal form, or whether it passes into another shape and becomes locomotive.

Now, so far as my own observations extend, neither the remarks of

* Carpenter, Man. of Physiology p. 123. † P. C. vol. xxii. p. 168.

† New Edin. Phil. Jl. vol. xxxi. for 1841 p. 239.

Agassiz and Vogt, nor those of Meyen, apply to the *Hæmatococcus* of the salt-pans in Bombay. In the first place, I have never, with the exception of a minute animalcule traversing the field of the microscope now and then, seen any organism in the lixivium of the salt-pans of Bombay which contained the *Hæmatococcus*,—but the *Hæmatococcus* itself. In this case then, at least, these globules cannot be considered the eggs of the *Philodina roseola*, more particularly as Ehrenberg states* that, this rotiferous animalcule, which is 30 times as big as the *Hæmatococcus*, deposits its eggs in heaps and remains a long time with the young ones produced from them. Neither have I seen Meyen's remarks verified here; for although I have frequently, for six months together, examined the same globules of our *Hæmatococcus*, kept in its natural lixivium, and others kept in a dried state, I have never seen them move in either instance, nor have I ever recognized any appreciable difference in their shape.

As to the resemblance in color of the salt of Bombay containing the *Hæmatococcus*, and the pink rock-salt of the mountains, all that can be stated is that, in the former there can be no doubt of the coloring material, while in the latter it has been said by some to be due to the presence of the pink remains of animalcules,† and by others to the presence only of the red silicate of iron.‡ After what has been stated respecting the source from which the red color of the salt in Bombay and that on the Coast of Arabia is derived, it would not be surprising to find that the “blood red” color of the earth about Kalabagh,§ which is in the midst of salt rocks, was also owing to the presence of the *Hæmatococcus*.

* Pritchard, Infusoria, liv. et fos. 8 vo. p. 407 para. 705. † Silliman's JI.

† Dr. Giraud, this JI No. vi.

§ Introduction to Elphinstone's Cabool.

ART. VI.—*Memoir on the Cave-Temples and Monasteries, and other Ancient Buddhist, Brâhmanical, and Jaina Remains of Western India.* By JOHN WILSON, D. D., F. R. S., Honorary President of the Bombay Branch of the Royal Asiatic Society.

The Royal Asiatic Society of Great Britain and Ireland having, on the suggestion of James Fergusson, Esq. to whom we are so much indebted for the artistic and critical illustration of the architectural antiquities of India, represented to the Court of Directors of the East India Company, the propriety of taking steps for the preservation, as far as possible, of the cave-temples and other ancient religious memorials of this country, and for their full delineation and description, before the work of their decay and destruction has made further progress, that Honorable body has promptly responded to the call which has been addressed to it, and already taken certain steps for the accomplishment of the objects which are so much to be desired. With reference to the latter of these objects, it has determined to appoint a general Commission of Orientalists to direct its accomplishment in the way which may best tend to the illustration of the history, literature, religion, and art of ancient India. Preparatory to the commencement of the labours of that commission, and the issuing of instruction for its researches, another of a local character, has, with the approbation of the Government of India, been formed by the Bombay Branch of the Royal Asiatic Society, to make such preliminary inquiries about the situation and extent and general character of the antiquities which are to be the subject of investigation as may facilitate its judicious commencement and prosecution. By this Bombay Commission, the following notes, prepared by Dr. Wilson, are issued, in order briefly to indicate what has already been done in the North-West of India in the departments of research referred to, and to call forth information, where it is wanted, from parties who have access to the remains mentioned and to others of a similar character, or who already may have made themselves familiar with their general features.

EXCAVATIONS.

The ancient religious excavations of India, forming its most interesting remains, it has been found, belong severally to the Buddhist, Brâhmanical, and Jaina religions.

The **BUDDHIST** excavations are the most numerous, ancient, and diversified. They consist of oblong *Chaityas*, or temples,—generally, though not always, with lofty roofs excavated in the shape of a horse-shoe,—enshrining what have been called *Dahgobs**—masses of rock or erections in the form of a bell or beehive enclosing some supposed relic or emblem of a Buddha ; *Vihâras* or *Mathas*—monasteries containing the cells of Buddhist devotees associated as cœnobists, frequently with a principal figure of some Buddha as an object of devotion, and various other sculptured figures for worship and ornament ; *Shâlâs*—square or oblong halls for public instruction and consultation ; detached *Grihas*—cells, intended for solitary hermits, or the accommodation of their stores ; and *Vinhâs*†—reservoirs for collecting water for the personal consumption of the monks and their disciples, and use in their religious rites. Exterior to the excavations now referred to, and particularly the temples, are frequently to be found, ornamental or commemorative *Stambhas*—pillars, generally monoliths hewn like the temples out of the living rock ; small *Dahgobs*—either monoliths consecrated to the Buddhas or their worshippers, or built like the preceding, in the ordinary manner ; and *Stûpas* or “Tops” resembling these Dahgobs—mounds covering the ashes of distinguished Buddhist worshippers.

The figures of Buddha connected with the excavations now referred to, are almost uniformly destitute of such monstrosities as a plurality of heads, legs, arms, etc. as are to be observed in Brâhmanical images. They are represented as receiving worship and enthronization, as dispensing blessings, or as engaged in contemplation ; and as

* The word Dahgob is supposed by some to come from *Dhâtugarbha* the receptacle of elements ; and by others from *Dehagupta*, the holder or concealer of a body.

† This name is taken from an inscription above one of them at the Bhâjâ caves, copied and translated by Dr. Wilson.

having a variety of postures, standing, sitting, or squatted—sometimes with the feet drawn up and the knees protruded, sometimes with one foot up and another down, and sometimes with both feet on the ground. They are all of one type, as far as the expression of intellect is concerned; and they indicate little life, genius, or reflection. Abstraction seems their general characteristic; various figures representing their attendants, or introduced for purposes of ornament, are sculptured near them in different forms and attitudes, often of a grotesque character. On the ceilings and walls of some excavations, are remarkable paintings, forming groups of men, and certain of the lower animals, with various utensils and instruments, illustrative of the occupations and manners and customs of the former inhabitants of this country, and even of the foreign people with whom they may have held intercourse.

The BRAHMANICAL excavations are principally *temples*,—either representing the interior of such places of Hindu worship, or their complete structure, and generally with numerous pillars supporting a low roof, with rafters above their capitals. They are dedicated to Shiva, and distinguished by the different figures of that deity, such as the *Trimūrti*, or Triad of the deity, representing the functions of expansion, continuance, and reduction; the god in his proper character, attended by his wife Pārvatī, and surrounded by the other principal gods of the Hindu pantheon assembled to enhance his greatness, and attended by *munis*, *ṛishis*, and other devotees and hermits; the god united with Pārvatī, as *Ardhanārish*, half male half female; the god in his more terrific and monstrous forms, as *Bheirava*, the dreadful, *Asht-Bhujākār*, the eight-armed etc.; and the god as the generative principle, in the form of the *Linga*. In these temples, too, *Ganesha*, the son of Shiva occupies an important place. *Brahmā*, and *Vishnu* with most of his *Avatāras*, are also found in some of them, though in a subordinate position.

The *Jaina* excavations are also principally temples. They are not numerous in the West of India; and it is rather difficult to distinguish them from those of the Buddhists, with whom the Jainas are intimately allied. Some one of the twenty-four *Tīrthankāras*, or emancipated Jīnas,—particularly *Neminātha* or *Pārasnātha*,—occupies the chief

places in them ; while the other *Tirthankárs** occupy the verandahs or secondary positions.

The principal groups of excavations in the West of India which have been brought to notice, are the following :—

I. THE CAVES OF SALSETTE.

In the island of Shashti† or Salsette, contiguous to Bombay, are no fewer than five groups of religious caves, at considerable distances from one another.

1. Of these, the KA'NHERI' CAVES‡ are by far the most important. They decidedly belong to the Buddhists, of the form of all whose excavations, they present examples. They have been described by Mr. Salt in the first volume of the Transactions of our Society under its original designation ; and Mr. Fergusson's notes upon them, in the eighth volume of the Journal of the Royal Asiatic Society, are very interesting, in both an antiquarian and architectural point of view. Dr. Bird opened one of their exterior *Stúpas* in 1839, and found near it some valuable relics, one of which has a Páli inscription. The inscriptions on their verandahs and pillars, he has given in his late work,§ but without a translation ; but his transcript, owing to some mishap or other, has been found to be not sufficiently correct, and the originals will require to be again carefully copied or taken in fac-simile. The form of their letter is that of the more modern type, a fact which well agrees with Mr. Fergusson's opinion respecting their age, founded on the style of their architecture. There are two gigantic figures of Buddha, about twenty feet in height, which front one another in the northern and southern corners of the porch of the *Chaitya*. They represent him as dispensing his blessing with his right hand, and as elegantly raising the slender Shála or shawl, with his left. The groups

* Sometimes written *Tirthákárs*.

† So called from its anciently having "shashti," or sixty, villages. That now nearest the caves on the old Tháná road, is called Vihargáum, vulgo Vehadgáum, or the village of the "monastery," evidently having reference to the Buddhist establishment of *Kánheri*.

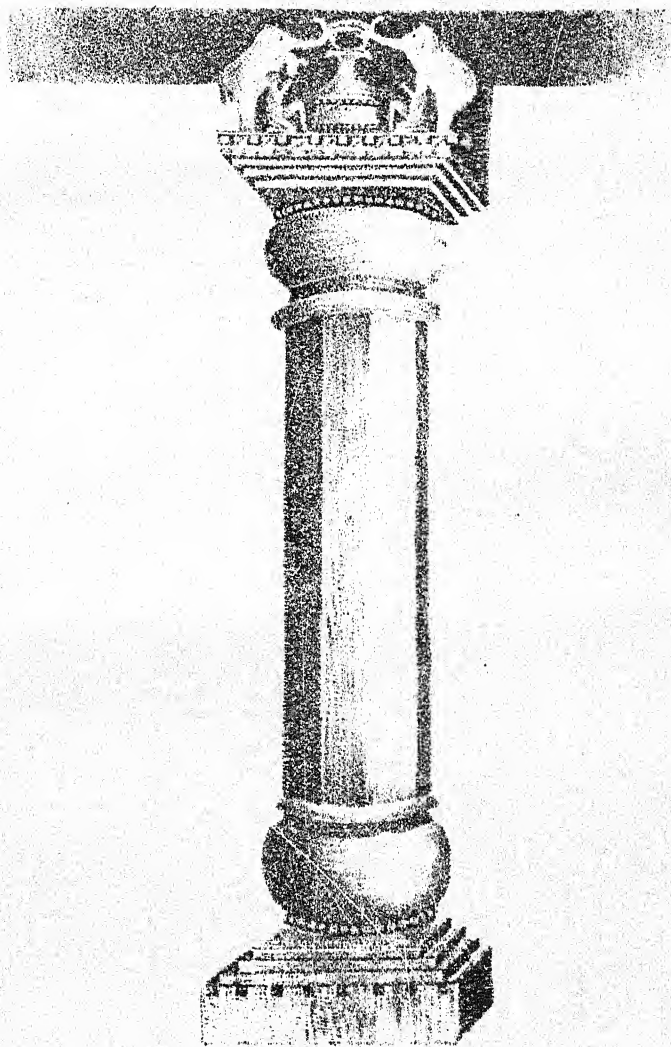
‡ Or, the Caves of the Confused Noise.

§ Historical Researches on the Origin and Principles of the Buddha and Jaina Religions, etc, Bombay, 1847.

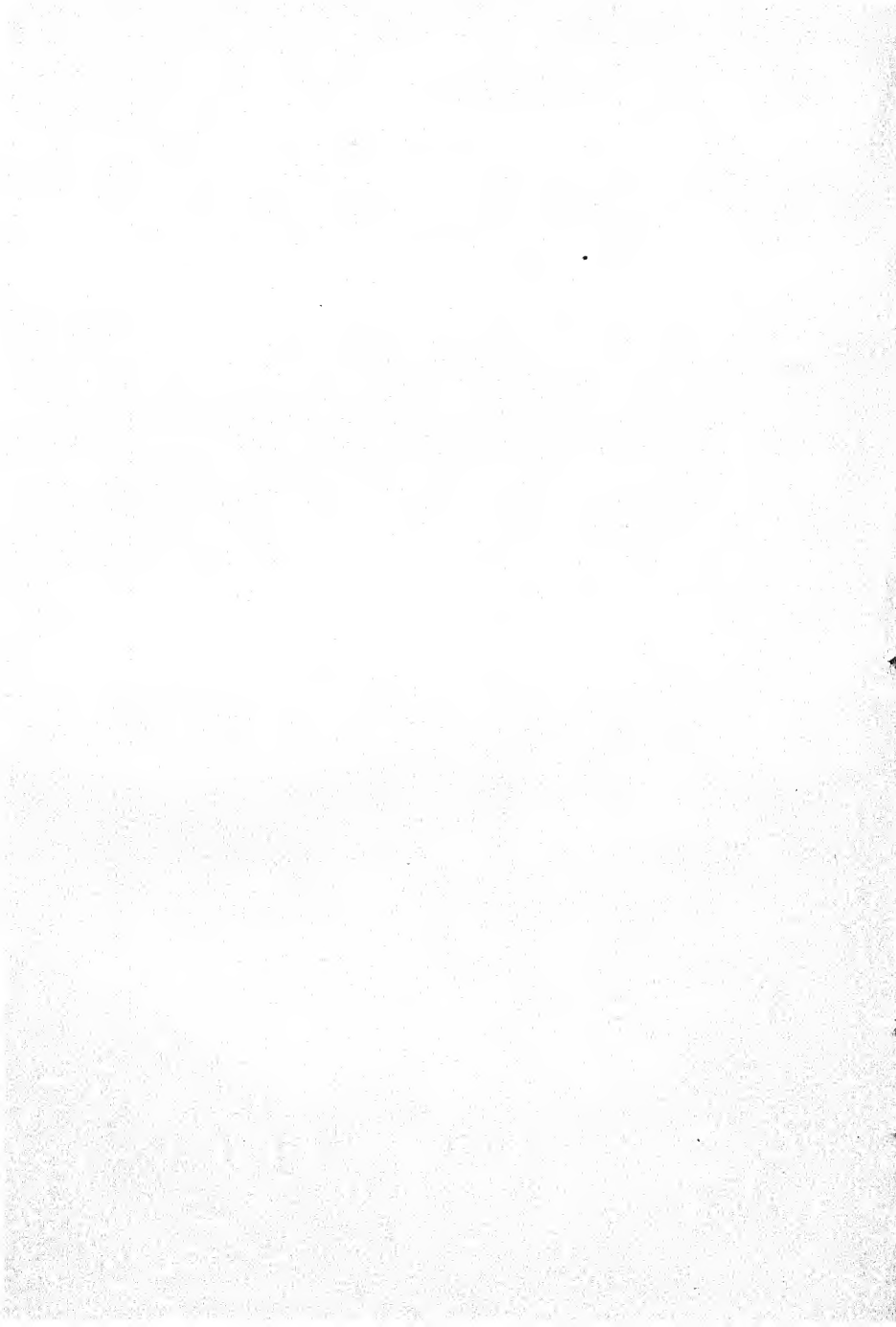
of men and women in the front of the music gallery below, are well conceived, though of a grotesque character; and their ornaments, as those in some other Buddhist temples, have been noticed as similar to those now worn by the *Bhils* and *Banjáris*, and other aboriginal tribes. The *Dahgob* within the chaitya is large, but without ornament or neatness. The umbrella with which it must have been originally surmounted, no more exists. The pillars are worthy of notice in an architectural point of view; and a lithograph of one of them is subjoined to this article, as a specimen. The *Shálas*, or halls of instruction, and the cells for the accommodation of the monks, situated on both sides of the ravine descending from the hill, are very numerous; and one of the former, of large dimensions, has many neatly sculptured figures on its walls, well worthy of being portrayed. In two of the smaller caves are remains of some painted figures, of which specimens were lately taken by Mr. A. West. The hill in which the caves are executed, requires perhaps a more careful inspection than it has yet received. When it was lately visited by the writer of these notes, and some of his friends, they found, on the north side of it, what appeared to them the site of a *structural temple*, with a large flight of steps leading to it, and, on the opposite side, a meridional line cut in the rock, with a fragment of a circular stone lying in its neighbourhood.

2. Near the village of KONDATI' there a few Buddhist excavations, which are evidently an offset from those of Kánherí. They contain a few figures and a Dahgob, and have one or two inscriptions. They have escaped the attention of Mr. Salt and Dr. Bird; but their existence has been well known to Europeans for a considerable number of years. Their inscriptions and figures have been lately copied by Mr. A. West.

3. The caves at JOGESHWAR, near Ambolí, form an extensive Bráhma-nical Shaiva temple, in some respects resembling that of Elephanta, but probably posterior to it in point of workmanship. They have not yet been either minutely described or delineated, though they are noticed by Mr. Salt; and a particular account of them will be acceptable. Owing to their subterraneous position and extreme dampness, and the soft nature of the rock of which they are composed, they are fast going to decay. Their name is noticed in a subsequent part of this paper, as forming, with other circumstances, a note of time giving



COLUMN IN BUDDHIST CAVE, KANHERI
restored



some indication of the date of their excavation. An idol of *Devī* which they contain, is noticed under the name of *Yogeshvarī Mahā-Lakshmi* in the twenty-ninth chapter of the first section of the *Sahyādri Khand* of the *Skanda Purāṇa*.

4. The caves at MONT-PEZIR are also Bráhmānical, and dedicated to Shiva. They have been appropriated by the Roman Catholic inhabitants of Salsette as a church, in lieu of their own structural fabric, which they have allowed to fall into decay.

5. The caves at MA'GA'THA'NA', near Poinser, are of no great extent. They are also dedicated to the god Shiva. The number of Shaiva caves in Salsette seems to indicate that the Bráhmāns, after the overthrow of Buddhism in the West of India, had a pride in attempting to rival the works of their predecessors, and that in the vicinity of these works.

II. THE CAVES OF ELEPHANTA.

Of all the excavations in the West of India, those of GHA'RA'PURI,* or the "Elephanta" of the Portuguese,† are the best known; and little can be added to the accounts of them and the representations of their figures which have been published by Niebuhr in his *Travels*, and especially by Mr. William Erskine in his admirable paper in our own *Transactions*. They are decidedly Bráhmānical, and devoted to the god Shiva, who occupies the most prominent place in them in the form of the *Trimūrti*, the *Linga*, etc. Several of the compartments of their figures—as that in which the marriage of Shiva to Párvatī is represented,—resemble those of Kailás at Elora,—to which it is probable they are of later construction.‡ Diogo de Couto, the Portuguese an-

* Hill of Purification.

† From the figure of an elephant near one of the landing places.

‡ Of the compartment (No. 7, of Niebuhr) to which reference is here made, and which Pyke and Moor consider as representing a marriage, Mr. Erskine says, "From the most careful inspection of the sculpture, I can perceive nothing to favour the supposition." It must be noticed, however, that Párvatī stands on Shiva's right hand, which among the Hindus is the position of a female only on the occasion of her marriage; and that a priest, or Daksha, seems pushing her forward, to overcome her bashfulness. The group corresponds with another at Elora, which the Bráhmāns interpret as a representation of Shiva's marriage, and adjoining to which there

nalist, mentions that a slab, containing an inscription, was removed from them and sent to Europe by the Portuguese.* Traces of letters, at one or two places, are distinguishable on the roof. It is worthy of notice that they are in what has been called the Buddhist cave character, which, from this and other facts, appears to have been well known to the Bráhmans. Connected with the caves of Elephanta, which have been so long celebrated, and which are all designed for purposes of worship, there were discovered by Mr. Trotter, a few years ago, upon an adjoining hill, two neatly excavated apartments, most probably intended for the residence of priests or devotees. Doors and locks have lately been put upon them, excluding the public from their inspection ; and it may be well that free access to them should be secured by the authorities of the island or by government. The work of destruction and decay is proceeding rapidly in the great excavations, notwithstanding the fact that they are committed to the care of a pensioned soldier. A barbarous restoration in clay of some of the broken limbs of the figures was recently attempted. It is well that the delineations given by Mr. Erskine are so complete and perfect.

An image of Deví, in the form of a tiger and named *Umá-Wágesh-warí*, which is placed on the hill above the caves, is mentioned in the twenty-ninth chapter of the first section of the *Sahyádrí Khand* of the *Skanda Purána*.

is another group of figures illustrative of proceedings on the day subsequent to the marriage.

* Couto's account of the inscription is the following :—" Quando logo os Portuguezes tomáram estas terras de Baçaim, e de sua jurisdição, que foram ver este Pagode, lhe tiráram huma formosa pedra, que estava sobre a porta, que tinha hum letreiro de letras mui bem abertas, e talhadas, e foi mandada a el Rey, depois do Governador da India, que então era, e mandar ver por todos os Gentios et Mouros deste Oriente, que já não conheceram aquelles caracteres ; e el Rey D. João o III. trabalhou muito por saber o que estas letras dixiam, mas não se achou quem as lesse, e assim ficou a pedra por ahi, e hoje não ha já memoria della."—*Da Asia de Diogo Couto*, Dec. Set. Cap. xi. What a valuable acquisition would this inscription be, now that the cave character is so well known. Perhaps, it may be found in some obscure corner of the Royal Museum at Lisbon, or of some of the colleges at Coimbra.

III. THE CAVES OF KARANJA'.

These are cells of a very insignificant character, and are now mostly filled with water. They are here noticed only as vestiges of the oriental ascetism in another of our Bombay islands, in all of which, capable of supporting a small population, there appear to have been hermitages, either Buddhist or Bráhmancial.

IV. THE CAVES OF MAHÁD IN THE KONKAN.

Near the town of Mahád, at the head of the Bankot river, some Buddhist excavations were discovered many years ago. Of these Dr. Bird says, "The two caves of Mahar in the Konkan, are situated about a mile from the town, on the right hand of the road leading, by Indapur, to Nagotáná and Bombay. They are very small and rudely executed, but are distinguished by the two lithographed inscriptions of Plate xxxix" [of Dr. B.'s work]. Of the inscriptions now mentioned, the first only is to be found at the place now indicated. The other is at another series of caves, consisting of a pretty considerable monastery with its concomitants, near the village of PA'LA' contiguous to Mahád, visited in the end of December 1848 by Mr. J. S. Law, the Collector of Tháná, and the writer of these notes. Some minor inscriptions exist at the same place. When it was lately visited by the parties now mentioned, other cave temples in the vicinity were brought to notice by natives of whom inquiries were made. Referring to some of these, Mr. Law, in a note to Dr. Wilson, says, "There is nothing but a simple cell with a veranda, and two or three unfinished ones, on the hill near the ferry at Mahád. At KULGA'UM on the other side of the river, there are several cells and one larger cave, which might be called a Vihár, but nearly filled up with earth. Here I found some short inscriptions, of which I enclose a copy." Of the inscriptions now referred to, it may be well to procure a fac-simile.*

* It is probably of the caves near Mahád or Pdld, that Niebuhr says, "Pas loin du fort victoire [Bankot], il y a (dit on) aussi une grande Pagode, taillée dans un rocher, ou comme un autre s'exprime, 25 maisons avec des chambres, taillées dans le Rocher.—Niebuhr, voyage, tom. ii. p. 32.

V. THE CAVES OF KUDÁ.

These caves were lately brought to notice in the circumstances mentioned in the following extract from the proceedings of the Bombay Branch of the Royal Asiatic Society :—Dr. Wilson directed the attention of the meeting to the interesting fact that several series of CAVE-TEMPLES, hitherto wholly unknown to Europeans, had just been brought to notice in various parts of the Maráthá country. Among these, the most remarkable are those near the village of Kudá, situated on the Rájpuri creek in the Konkan, between three and four miles west from the town of Thal, and about forty-two miles in the strait line from Bombay. The discovery of these caves occurred in the following circumstances. About the commencement of the rains of 1848, Vishnu Shástri, the Brahman who had assisted Mr. Watken, Dr. Wilson, and others, so much in the decipherment of inscriptions in the cave character, was appointed Mahálkari of a district in the Konkan. When about to commence his duties, he called upon Dr W. who asked him to make every inquiry in his power about the existence, or otherwise, of a series of caves with a *chaitya*, as the centre from which the caves at Mahad, which are only monkish cells, would probably be found to be only an offset. In a short time, he reported both to Mr. Law the Collector of Tháná and to Dr. W. as the result of his research, the information which he had obtained of the existence of a magnificent series near the village of Thal. Mr. Law at the opening of the season, sent the Bráhman personally to inspect the caves ; and he found them to correspond with the descriptions which he had received of them. He also brought with him a fac-simile of some of the inscriptions, which Dr. Wilson exhibited to the meeting, Mr. Law has been the first, or among the first, of Europeans to inspect these works. In a letter dated the 15th January, addressed to Dr. Wilson he says, “ I visited the caves of Kudá a few days ago, and I may safely say, that they far exceeded my expectations. There are twenty-two caves altogether, great and small, and no less than four of them have *Chaityas*. The principal one is 60 feet in length, with several bas-reliefs of Buddhas sitting cross-legged on lotuses and others on *Sinhásanas* with the usual attendants, dolphins, etc. The most inter-

esting and best executed, however, are of male and female figures, perhaps representing Buddha and his Shakti, the former with a kind of *turban* for his head-dress. This, as well as the other caves containing chaityas, is on the plan of a Vihār, not of a regular temple, as at Kārlā. I found eighteen inscriptions, and have got good fac-similes on cloth of the longer ones and copies of the rest. The larger ones probably excel any that have been found, in the perfect formation of the letters, and are as plain as if they had just been cut. Some of them contain such complicated compound letters, that, I think they must be in Sanskrit. I propose to send a short account of these caves with drawings, shortly to the Bombay Asiatic Society, but in the mean time you are at liberty to mention the purport of what I have stated at the next meeting you may attend, should you wish." This information must be peculiarly interesting to the students of Indian antiquities. Mr. Law has got at these caves upwards of a score of inscriptions neatly copied and taken in fac-simile; and there does not appear to be any great difficulty in executing their translation.

It would appear from an old map lately brought to notice, that the existence of these caves was known to some of the natives engaged in one of the Konkan surveys.

VI. THE CAVES OF JĀMBRŪG.

These Caves were first heard of by Mr. Law, who has partially looked at them, without, however, discovering in them any figures or inscriptions. They will soon, it is believed, be carefully examined by himself or some other European. They are situated near the village of *Jāmbrūg*, at the foot of the Ghāts lying nearly East of Tháná. Dr. Wilson, when on his way to Puná in May 1849, met, at Khálápur, Viṣṇu Shástri who was in charge of that district, and asked him to send a trustworthy person to Jāmbrūg to examine the excavations there. The report received on this occasion simply was, that, "There is a *Lenè* at Jāmbrūg. The Cave is near a tank, and has only a small door. It is dark within; and in late times an image of *Bahīravanātha* has been established within it, on account of which the ignorant people of the place give it the denomination of the *Nāthāchē Lenè*."

VII. THE CAVES OF KONDA'NA'.

These interesting caves, situated near the base of the *Rājmachī* hill, were discovered by the messenger sent to Jámbrúg in the circumstances mentioned in the preceding paragraph. The following is the notice given of them at the time by Vishnu Shástri to Dr. Wilson :—

कोंडाणें गावाजवळ लेणें फार चांगलें आहे. तेथील मुख्य ठिकाणीं आंत जाण्याचा मोठा दरवाजा आहे, आणि त्याला लांकडाची कमान आहे. आंत बुद्धाचे देवस्थानाचा वाटोळा घुमट आहे, आणि तो मुख्य सभामंडप वेहेरचे सभामंडपासारखा उंच आहे; व दरवाजाचे वाजूस बुद्धाच्या मूर्ती आहेत, आणि त्या मूर्तीचे वरचे वाजूस एक ओळ अक्षरांची कोरलेली आहे, तिळा अकरा किंवा बारा अक्षरें फार चांगलीं आहेत, याखेरीज अधिक अक्षरें लिहिलेली नाहींत. मुख्य सभामंडपाचे शेजारी दुसरा सभामंडप लाहान आहे. मिळोन दोन ठिकाणें फार चांगलीं आहेत. मुख्य सभामंडपाचे खांब मुसलमान लोकांचा कल्याणांस अमल होता तेव्हां त्यांनी खालून तोडिले आहेत असें तर्काने दिसतें. हें ठिकाण खालपुरापासून पांच कोश लांब आहे. डोंगरास चढाव बराच आहे. खोपवलीपासून जवळ आहे, परंतु रस्ता फार अवघड आहे. यास्तव जाणें झाल्यास चांगल्या रस्त्यानें जावें झणजे पालखीत बसून जाता येईल. पुढें ज्या ठिकाणीं फार चढाव आहे तेथें घोड्यावर बसून गेले पाहिजे. याप्रमाणें कोंडाण्यांचे लेण्यांचा मजकूर आहे.

—“There is a very excellent excavation near the village of Kondáná*. There is a large gateway forming the entrance to the principal apartment ; and it has a wooden arch. Within, there is a circular dome of a Buddhist temple ; and this, the chief assembly hall, is lofty like that at Veher [near Kār!á]. There are images of Buddh at the side of the gateway ; and above these images there is an inscription of eleven or twelve letters well formed, but there is no other inscription. There is a second small assembly hall near the chief one. Both the places are important. There are grounds for supposing that the injury which has been sustained by the pillars of the principal assembly hall, was caused by the Musalmáns when they were in authority at Kalyán. The place [of the caves] is five kos distant from Khálápúr. There is a considerable ascent. It is near Khopawálí [at the foot of the Bhor

* In the Maráthí this is Kondánè ; but to prevent perplexity and to secure uniformity, it is desirable to give the names of places in their Hindí form.

Ghát] ; but the road is very difficult. If you wish to go to it, the good road must be taken. You will nearly reach it in a pālkhí. Where the ascent is great, you must have a horse. So much for the excavation at Konḍáná.”

Mr. Law has lately been able to visit these excavations, and to procure illustrative drawings of their front and principal figures. They appear to be more modern than those of Salsette. The account above given of them by Viṣṇu Shástri has been found to be correct.

VIII. CAVES OF THE KONKAN UNVISITED BY EUROPEANS.

Viṣṇu Shástri now alluded to has mentioned to Dr. Wilson, that he has heard of the existence of several excavations in the Konkan, of which nothing is yet known by Europeans. These are said to be respectively in the neighbourhood of *Chipalún*, *Dábhul*, *Sungameshwar*, *Gávhané-Velgaum*, *Wadé-Padel*, *Cheul-Astagar*, and *Chandansar*, near *Agáshí*. It is to be hoped that they will not be permitted to remain long without examination.

Chipalun, one of the places now referred to, is mentioned in the first chapter of the second section of the *Sahyádrí Khand* of the *Skanda Purāṇa*, as *Chittapolan*,* the village at which, according to that curious document, the creation of the *Chittapáwan* Bráhmans was effected by Parashuráma from some ashes or corpses found at the *Chitta*, or place for burning the dead, when the established priests or *Viprás* refused to assist him in the performance of a *Shráddha*. The legend may have originated at the overthrow and conversion of the contemplative Buddhist monks of the locality. Of the forcible conversion of the Buddhist monks in the Konkan some memorials still exist. The writer a short time ago found at a village near *Indápur*, a pillar, in fragments, representing, in the lower parts, a bloody battle, conducted against the Buddhist priests by men mounted on horseback and with spears and shields, and in the upper, the bull of Shiva, the emblem of Bráhmanism, trampling and triumphing over them when discomfited. The Bráhmans sometimes say that the original name of

* सहाद्रि च तले ग्राम चित्तपोलन नामतः The village named *Chittapolan* at the base of the *Sahyádrí*.

Chittapolan was *Chittapūrṇa*, or the fulfilment of desires, which has the appearance of a Buddhist name.

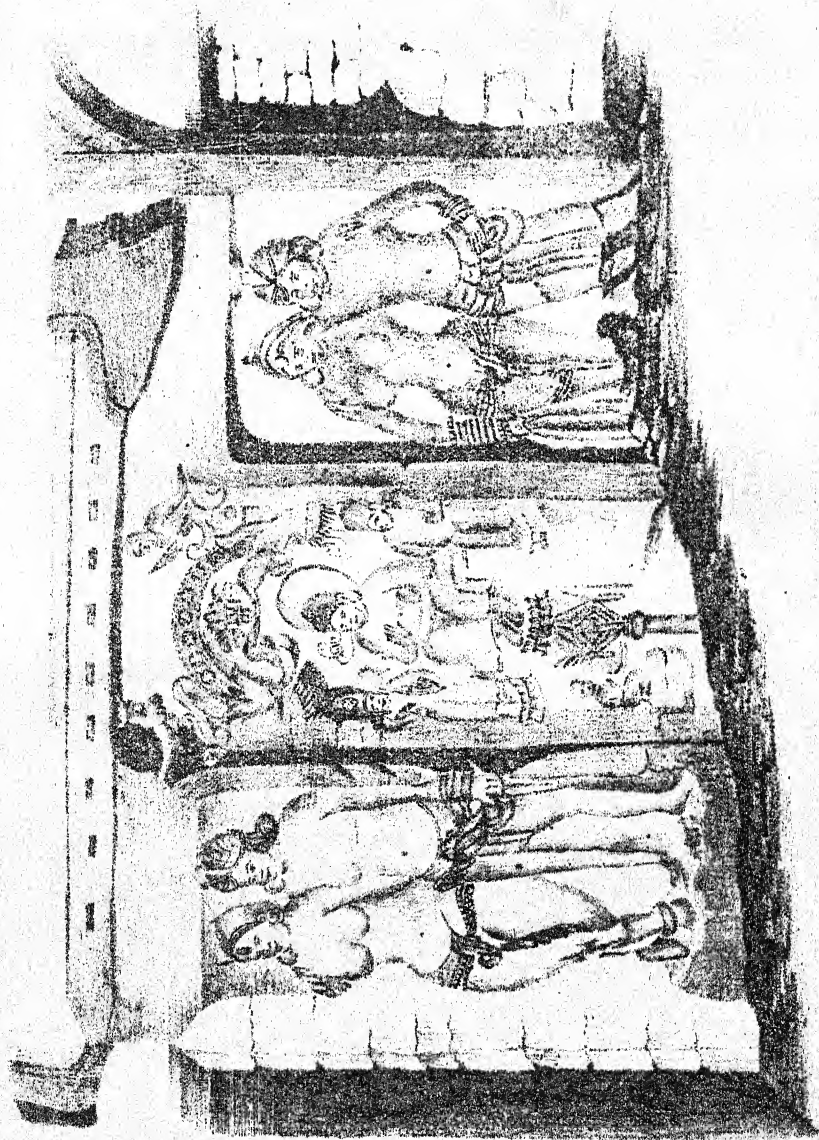
Ascending the mountains by the Bhor Ghát, contiguous to which are the caves of Kondāṇā last described, we come to a very remarkable and famous series, situated in the Sahyādrī range itself.

IX. THE CAVES OF KA'RLA'.

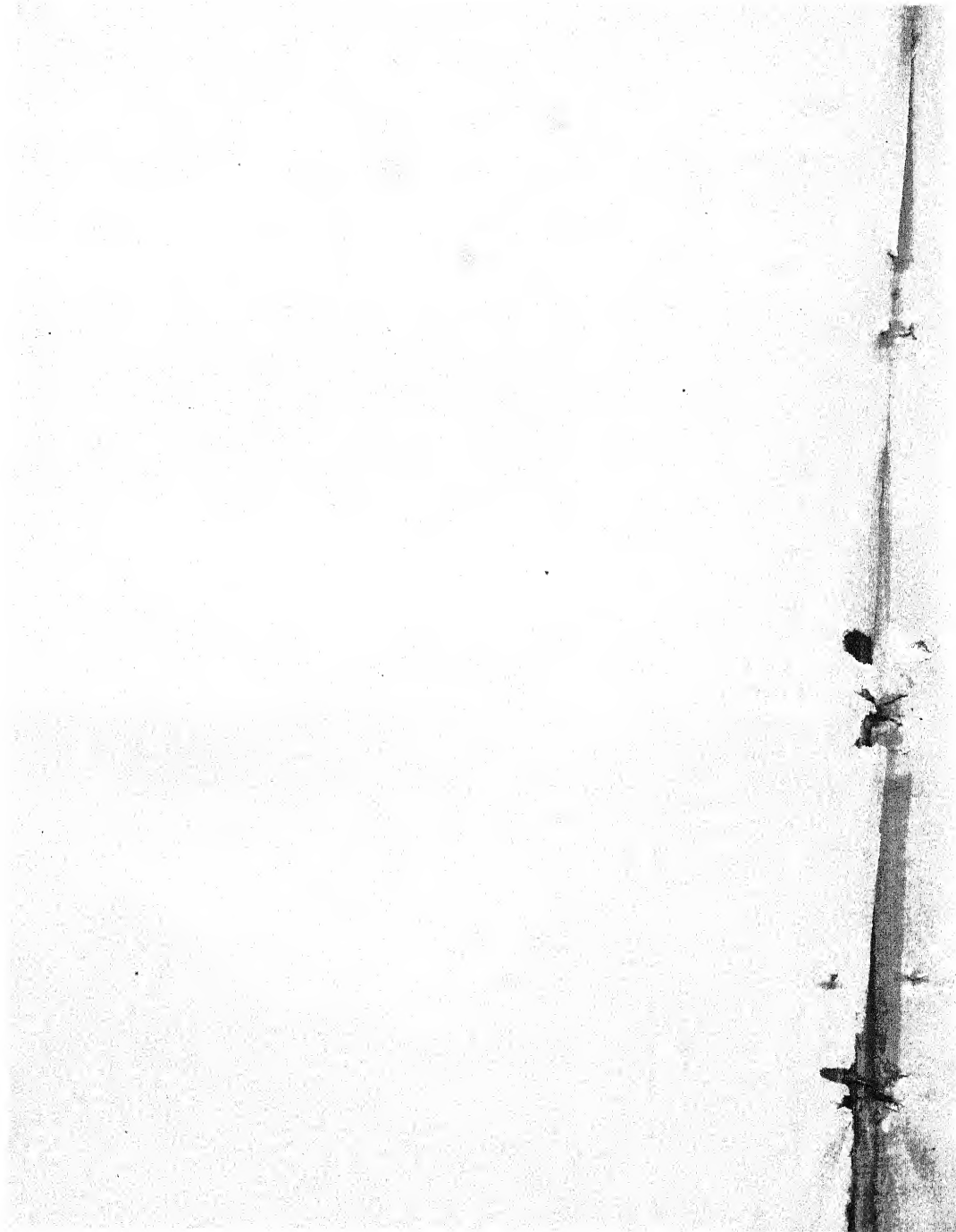
1. The peculiarly interesting Caves near the village of Vehergāum or VĪHA'RGA'UM, to north of Kárlā, on the Puná road are those which are commonly known by the name of the KA'RLA' CAVES. They are all of the Buddhistical character. They have been described by Lord Valentia in the second volume of his Travels, and ably commented upon by Mr. James Fergusson, in his valuable paper already referred to. Fac-similes of their inscriptions were taken on cloth a few years ago by Dr. Smyttan, the Rev. James Mitchell of Puná, and the writer of these notes, who presented them to the Bombay Branch of the Royal Asiatic Society, along with a transcript and approximative translation of one the most important and legible of them,† Copies of these fac-similes

* Sometimes but incorrectly written Kárlī. The Marathī name is कळ Karle, which in its Hindī form, the best to adopt in the representation of places, becomes Kárlā.

† Assuming the word *Vijaya* with which this inscription (above the elephants on the northern side of the porch of the Chaitya) commences, to be a proper name, and that of the *Jabudīp Mahārājotam* (*Jambudīpā Mahārājottama*), or emperor of Jambudīp, mentioned at its close to be that of Vijaya given by Mr. Turnour in the *Mahavanso* under the year 548, B. C., and supposing no perversion to exist in the case, this would naturally be the date of the execution of the excavation. Dr. Bird has very properly observed on this opinion, which from the first was propounded by Dr. Wilson merely as hypothetical, that "since there are undeniable and intentional perversions of historical data, in the first centuries of the Buddhistical era, by which Vijaya's landing in Ceylon is made to agree with the day on which Sakya expired, it may be well doubted, whether this cave can be so ancient as the inscription would make it." Dr. Bird thinks that he observes on another of the Kárlā inscriptions the date of the twentieth year of *Duthama Hara*, which would give about 163 B. C. for the excavation, and thus allow sufficient time for the propagation of Buddhism, in the Maráthā country by Asoka's missionaries mentioned in the *Mahavanso*. The reading is not altogether satisfactory; but a suitable review of the Kárlā inscriptions would require a separate paper.



BUDDHA WITH ATTENDANTS (KĀRLĀ).



are given in the late work of Dr. Bird, who has also given his interpretation of some of them. The principal excavation is a *Chaitya*, the largest, best preserved, and most interesting in point of art in India. Its pillars, figures, and other objects of curiosity, are well worthy of the attention of the artist. The Dahgob within has a large wooden umbrella over it, in a state of nearly perfect preservation. The wooden ribs of the roof also remain nearly entire. They are of teak, and are probably as old as the cave itself. The abacus on the capitals of the fifteen pillars by which the nave is separated from each of the side aisles, is of excellent sculpture. It is of two crouching elephants, their heads and necks only being visible, generally with a man and woman seated on each—the woman's hair being shed but having an ornament on front, and the man's collected and twisted like a Turkish turban, if, indeed, he has not a rope-turban like that sometimes worn by the lower orders of the natives. Behind the Dahgob, are seven plain octagonal pillars. Between the measurements of this Chaitya by Lord Valentia and Mr. Fergusson, there is a very considerable discrepancy. "Its interior dimensions," says Mr. Fergusson, "are one hundred and two feet three inches for total length, eighty-one feet three inches for length of nave. Its breadth from wall to wall is forty-five feet seven inches, while the width of the nave is twenty-five feet seven inches... In the Atlas to Lord Valentia's Travels, a detailed plan of this cave is given, on which the dimensions taken by the scale are forty-six feet wide by one hundred and twenty-six feet long; and as the plan appears to have been drawn with considerable care, (by Mr. Salt, I believe,) and these figures are repeated in the text, I was a good deal staggered by finding so great a discrepancy, and inclined at first to give up my own as incorrect. I have, however, retained them, not only because they were taken with care, and I cannot see how so great an error could have crept into them; but also because Lord Valentia's dimensions are quite at variance with those of all the Chaitya caves I am acquainted with."* In this instance, probably from some obliteration or confusion in Mr. Fergusson's notes, his usual accuracy has failed him. A careful measure-

* Journal of the Royal Asiatic Society, Vol. viii. p. 57.

ment, which we lately made, agrees with that of Lord Valentia within a few inches. The "lion-pillar" (as it is denominated in its inscription) exterior to the Chaitya, is a remarkable object, and is of sixteen sides. Mr. James Prinsep attempted, and partly with success, to translate an inscription upon it, from a transcript of Colonel Sykes.* Adjoining the Chaitya are some *Vihāras* and detached cells; but offering no great extent of accommodation for the monks, though the larger *Vihār* has three tiers.†

* Journal of the Royal Asiatic Society, February, 1838.

The following remarks of Mr. Fergusson, which are of a general character, may be here advantageously introduced.

"As this is decidedly the finest Chaitya cave in India, a few remarks on the architectural ordinance of these caves may not be misplaced.

"However much they vary in size or in detail, their general arrangements, as I mentioned before, are the same in every part of India, and the mode of admitting light, which is always so important a piece of architectural effect, is in all precisely identical.

"Bearing in mind that the disposition of parts is exactly the same as those of the choir of a Gothic round or polygonal apse cathedral, the following description will be easily understood. Across the front there is always a screen with a gallery over it, occupying the place of the rood-loft, on which we now place our organs: in these there are three doors; one, the largest, opening to the nave, and one to each of the side aisles; over this screen the whole front of the cave is open to the air, one vast window the whole breadth of the same section, stilted so as to be more than a semi-circle in height, or generally of horse-shoe form.

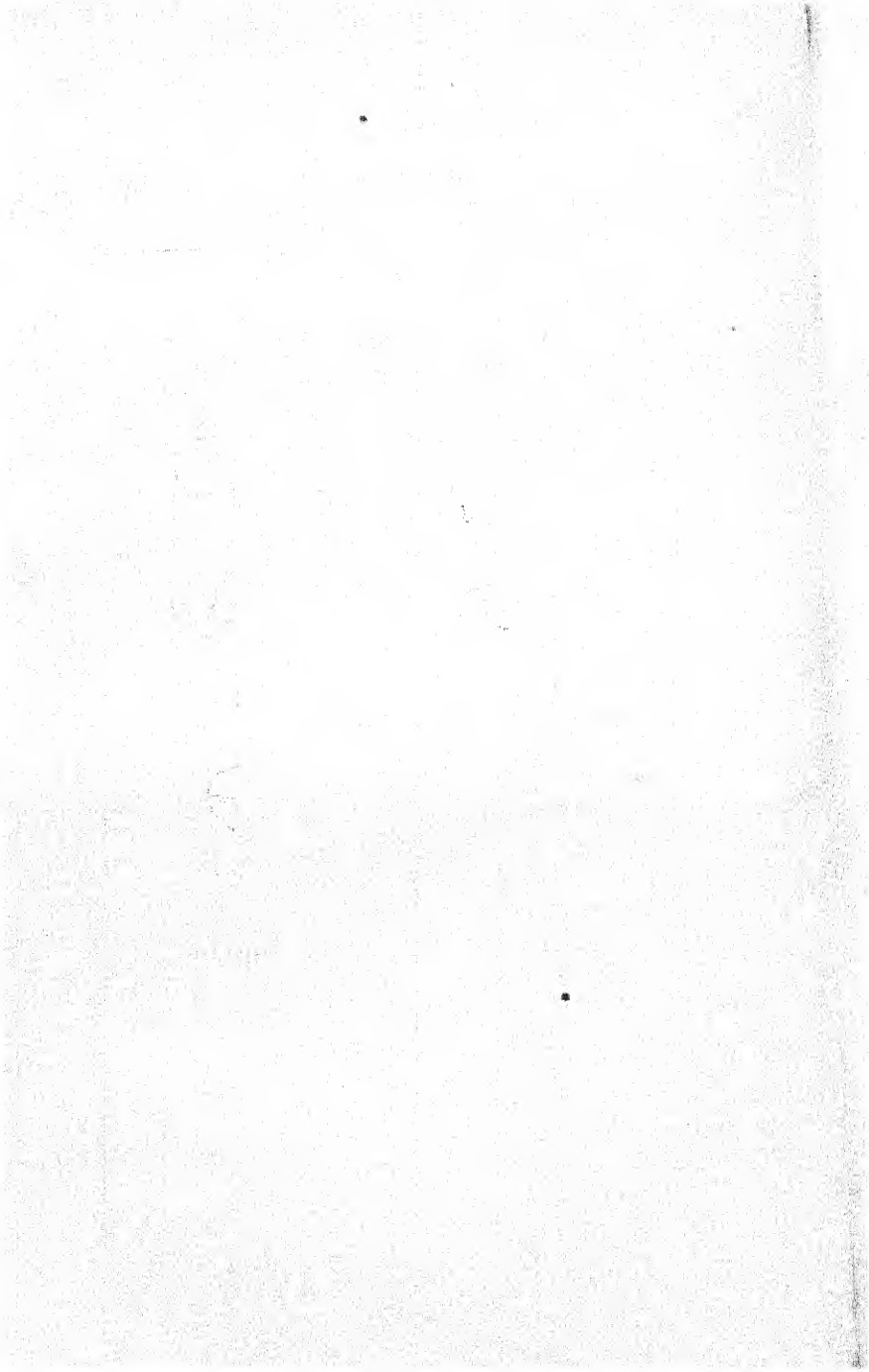
"The whole light, therefore, fell on the *Daghopa*, which is placed exactly opposite in the place of the altar, while the colonnade around and behind, is thus less perfectly lit. The pillars there being always placed very closely together, the light was never admitted in sufficient quantities to illuminate the wall behind, so that to a person standing near the door in this direction, there appeared nothing, but illimitable gloom.

"I do not conceive that a votary was ever admitted beyond the colonnade under the front, the rest being devoted to the priests and the ceremonies, as is now the case in China, and in Catholic churches, and he therefore never could see whence the light came, and stood in comparative shade himself, so as to heighten its effect considerably. Still further to increase this scenic effect, the architects of these temples have placed the screens and music galleries in front, in such a manner, as to hide the great window from any person approaching the temple; though these appear to have been omitted in later examples, as in the *Viswakarma* of Ellora, and the two later Chaitya caves at Ajunta, and only a porch added to the inner screen the top of which served as the music gallery, but the great window is then exposed to view, which I

AT THE CAVES OF BHĀJĀ.

ॐ नमो भगवते वासुदेवाय

ॐ नमो भगवते वासुदेवाय



2. The CAVES OF BHA'JA' lie nearly as far to the south of the village of Kárlá, as those now mentioned do to the north; and both series, it may be inferred from their contiguity, belonged to the same or an allied fraternity of Buddhist monks. Their existence was spoken of by natives to Europeans for a considerable time before they were visited by any of our countrymen.* Sir John Awdry was among the first particularly to examine them. They were afterwards viewed by Dr. Wilson, Mr. Mánakjí Kharshedji, and Mr. Westergaard of Copen-

cannot help thinking is a great defect. To a votary once having entered the porch, the effect is the same, and if the space between the inner and outer screen was roofed, which I suppose it to have been, no one not previously acquainted with the design could perceive how the light was admitted; supposing a votary to have been admitted by the centre door, and to have passed under the screen to the right or left, the whole arrangements were such, that an architectural effect was produced certainly superior to any thing I am acquainted with in ancient or modern temples.

"Something of the same sort is attempted in the classic and modern Hindu temples where the only light is admitted by the door directly facing the image, which is thus lit up with considerable splendour, and the rest of the temple is left in a rather subdued light, so as to give it considerable relief. The door, however, makes but a clumsy window compared with that of the Buddhist cave, for the light is too low, the spectator himself impedes a portion of it, and standing in the glare of day, unless he uses his hands to shade his eyes, he can scarcely see what is within. In the Hypethral temples, this was probably better managed, and the light introduced more in the Buddhist manner; but we know so little of their arrangements, that it is difficult to give an opinion on a subject so little understood.

"Almost all writers agree, that the Pantheon at Rome is the best lit temple that antiquity has left us; in one respect it equals our caves, that it has but one window, and that placed high up; but it is inferior, inasmuch as it is seen by every one in the temple, and that the light is not concentrated on any one object, but wanders with the sun all round the building."—*Journal of the Royal Asiatic Society*, Vol. viii. pp. 61 62.

* The earliest allusion to these caves which we can find, is the following. Oct. 27. [1804]. "Very early all the party, except Messrs. Salt and Smith, set off for Low Ghur. The road across the valley was good, but when we began to ascend, the palanquins were of little use. We saw a line of caves facing due west on our left under the hill, on the summit of which is the fort of Esapoor. My servant visited them by my orders, to examine if there were anything worthy of inspection. He reported that there was a small arched temple, similar in plan to that of Carli, but that there was not any inscription or figure of Buddh, and that smaller flat caves were on each side, but uninteresting; we did not therefore take the trouble of climbing to them." *Lord Valentia's Travels*, Vol. ii. pp. 165-6.

hagen, and others. They are inferior in point of dimensions and execution to those at Vehergáum. Approaching them from the north, we find first some wells; secondly, a small *Vihár*; thirdly, a *Chaitya* without a music gallery in front; fourthly, a two storied *Vihár*; fifthly, a well; and sixthly, fourteen *Dahgobs*, partly within and partly exterior to some ornamented rooms still unfurnished. The *Chaitya* is about sixty-one feet in length and twenty-six in breadth. It has twenty-seven octagonal pillars, about eight feet seven inches in height; and a double number of wooden ribs in the arch rising about the same height above them. Its *Dahgob*, which is of the same height as the pillar, is about thirty-four feet in circumference at the base. These caves afford only three small inscriptions, which Dr Bird has given, in the seventh number of our Journal,* from the transcripts of Mr. Westergaard and Mr. D'Ochoa. That over the well or tank to the south of the *Chaitya* is by far the most distinct. In the lithograph accompanying this paper, we give it as copied in the beginning of 1842 by ourselves, and as lately carefully compared with the original. Our decipherment in the Nágarí letters is the following,

महारथीस कुसीक पुत्स

वीन्हा दत्तस दयधमहटी ;

which we translate, "A well gifted by Mahārathi the son of Kusaka, for the sake of the religion of mercy," (a common designation of Buddhism on the cave inscriptions). Dr. Bird makes it

महारथशोकशक्रपुत्सत्तानंदात्तसादय्यादमापादः

"*The righteous gift of a symbol and vehicle of the purified Saka Saka, (Shakra or Indra) the resting place of the giver.*" Here, it must be admitted, "the doctors differ." Without asking a decision in our favour, we may fairly say, that the inscriptions, in the grouping of the words particularly, require greater patience than has yet been brought to bear upon them, even though only a few of the letters can now be doubtful.

X. THE CAVES OF BEDSA.†

A short account of these Caves was communicated by Mr. Wester-

* Journal of the Bombay Branch of the Royal Asiatic Society.

† In Maráthí, बेडसे.

gaard to Dr. Bird. "The caves at BIRSA, (or as it is called, in the map of the Puna Collectorate, Beira) are situated about six miles S. W. from Wargaum. The plan of the temple resembles Karli, but is neither of so great extent nor so well executed, and appears more modern. It contains a *Dahgop*; and its roof, which is ribbed, and supported by twenty-six octagonal pillars, about ten feet high, seems to have been covered with paintings, which are now, however, so indistinct, that nothing can be made out of them. There are four pillars, about twenty-five feet high in front, surmounted by a group of horses, bulls, and elephants. The first pillar supports a horse and a bull, with a male and female rider; the next three elephants and one horse, two of the elephants having a male and female rider; the third three horses and one elephant, a male and female rider being placed on two of the horses; and the fourth pillar is surmounted by two horses bearing a male and female rider. The hall of instruction which is of an oval shape, has a vaulted roof and is situated close to the temple. It contains eleven small cells; and over the door of one of them there is an indistinct and partly defaced inscription,"* A personal visitation of these caves enables us to add but little to this accurate notice. The length of the *Chaitya* is about forty-six feet; and its breadth at the door is about twenty-five feet and a half, while before the *Dahgob* it is nearly twenty-one. The pillars within the *Chaitya* are twenty-seven, agreeing in number with those at Bhájá. The *Dahgob* below is thirty-three feet four inches in circumference and ten feet three in height. It is surmounted by a sort of shaft on a scaffolding, which improves its form. On the sides of the *Chaitya* are one or two symbolic figures. The hall of instruction, or rather *Vihár*, which is semi-oval in form, has seven cells in its sides. Besides the inscription mentioned by Mr. Westergaard, there is another over a well to the south of the *Chaitya*, also given by him in a form which as closely agrees with our own transcript as could be expected.

The coupling of the Caves now mentioned with the village of WADGA'UM, has rendered it a matter of difficulty for some persons to find them. In visiting them we went from Kárlá along the Puná road to

* Journal of the Bombay Branch of Royal Asiatic Society, May 1844.

the bridge of the Indrayenī (with seventeen arches). We then struck over the hill of Kuṇḍawā to the right, above a tank, at a village of that name; and after passing along some table-land to the southwest, we descended in the same direction to the caves which are about 900 feet above the village of Beṇṣā'. They are not very easily accessible, and are not visible at any considerable distance, a mass of rock in front of the vestibule having never been hewn away. We took three hours to reach them from Kārā; but we got back in about a couple of hours.

XI. THE CAVES OF SHAILARWĀDI.

The native guide by whom we were conducted to the caves last mentioned, in reply to inquiries which were addressed to him, informed us that there was a *Lenā* near the posting-station called *Shailarwādī* about six miles beyond Waḍgāum on the road from Bombay to Punā. On arriving near the place to which he directed us, we left the road to the right, and ascended a hill called the *Guroḍī*. A little below the summit of that hill fronting the southwest, we found an excavation with four small cells, containing a *Yonī*, and at present sacred to Shiva, which appeared to us, from a bench going round the excavation in front of them, to have been originally Buddhistical. On examining the hill more particularly, we came upon a considerable *Vihār* below them, running E. N. E. and containing about a dozen of cells. Here we found a Buddhist inscription of five lines, which we copied, and which we still preserve. It is very possible that some *Chaitya* may be in the neighbourhood.

XII. CAVES SITUATED TO THE NORTH OF THE INDRA'YENI'.

The guide to whom we have now referred, and some other natives whom we met on the Punā road, brought to our notice other caves near the Indrayenī, which had not been formerly heard of by Europeans. They are so numerous, they said, when pressed for information respecting their localities, that they are to be found nearly in every hill and mountain. Making due allowances for exaggeration, there can be little reason to doubt that many cave-temples and monasteries remain yet to be discovered in the Sahyādrī range of mountains, in the roman-

tic valleys and recesses of which the Buddhists, in particular, seem to have strongly entrenched themselves. Of three series, we got pretty definite intelligence. They are at or near *Buddhwádí*, *Bámachandra*, and the northern *Vehergáum*. There can be little doubt, that in the direction now indicated, a large field of discovery exists.

XIII. THE CAVES OF PUNÁ.

These caves are situated near the village of BHA'MBURDA, not far from the *Sangam* or junction of the Mulá and Muthá. Their principal interest consists in the fact, that they are Bráhmancial, and at a great distance from any others of a similar character. They are cut out of a rocky hillock forming a gentle swell of the ground, and not conspicuous at any great distance. They consist of an open square area, to which there is a descent, with a series of plain and unornamented rooms, now empty,—except in one instance in which there is a *Linga* and *Yoní*—and a *Ghumatí* or shrine for *Nandí*, the bull of Shiva, formed out of the living rock in front. They appear to be posterior in point of age to the Shaiva temples in Salsette. Puná is but a modern city; but it is probable that there may have been some ancient religious establishments connected with the *Sangam*, and the hill of Parvatí lying to the east of the caves.

From Puná, we return to the Sahyádrí range by some others of its recesses, running up in the direction of Mahabaleshwar from the East.

XIV. THE CAVES OF WAT'.

For the first description of these caves, we are indebted to H. B. E. Frere, Esq., the Commissioner of Sátará, who has furnished to the Bombay Branch of the Royal Asiatic Society all the particulars of them which it seems desirable to know.

1. "The caves," Mr. Frere writes, "are cut in the soft trap rock in the southern face of a hill bearing nearly N. from Wái, and distant about four miles from the town. The hill is within the boundaries of the village of Lohárí; and the best landmark for reaching the caves is a small isolated hill, with a conspicuous Muhammadan tomb on the top, close to Sultánpur, and near the end of a spur, which runs out S.

E. from the hill in front of Pandu-Gaḍ. The ascent to the caves is very easy. The principal cave has been long used as a temple of Mahādeva, who is worshipped here under the name of 'Pālkeshwar,' or as the Kunbīs call him, 'Pālkobā.' The village Guru acts as Pujārī, and there is a jattrā on the fourth of Bhādrapad shudh. None of the villagers could give any account of the origin of the name.

"The principal cave consists of one large room, about 28 feet square and $8\frac{1}{2}$ high; open to the S. W. by an aperture which is about 19 feet wide. A low partition, with a bench in front, runs across the entrance of the cave, with a doorway near the left hand corner. At the back of this cave, in the middle of the N. E. side of the room, and raised one step above it, is a smaller room or recess about 15 feet square, in the middle of which is a Dahgob 6 feet 4 inches high, and 26 feet in circumference. It is formed of a portion of the natural rock, which has been left standing when the room was excavated.

"A rude detached stone pillar for a lamp stands beside and a Nandi (also on a detached block) somewhat the worse for wear, in front of the Dahgob, which is now regarded as a gigantic "linga," and worshipped accordingly, as an emblem of Shiva. On either side of the entrance to this Dahgob recess, up a couple of steps, are the entrances to two cells about 7 feet by 9. Each has a small window looking into the large room and opposite the door a small recessed niche or rather shelf [query a bed-place?] about 5 feet 9 inches long, by about 4 feet high, and about 2 feet deep.*

"To the right as you face the Dahgob, the S. E. side of the cave is pierced into four cells—one up a couple of steps, the others level with the floor of the large cave. Each has its little window beside the door. The two cells in the middle have each a stone bench, on the left as you enter them; while the two corner cells have recessed shelves opposite the doors, like those in the cells before described.

"A bench runs along part of the S. W. or outer side of the large cave, opposite the Dahgob, and along the whole of the N. W. side, or that which is on your left as you enter. On this bench are deposited a headless "Nandi," several fragments of small figures on detached

* Mr. Frere subjoins an illustrative sketch, which, with others furnished by him, is kept *in retentis* by the Society.

blocks, much decayed. Two of them are apparently the common figure of the seated contemplative Buddha.

"Separated from this large cave, by a partition about three feet thick, is a smaller and more irregular excavation, about 27 feet deep from the entrance, and about the same in its greatest breadth. It appears never to have been finished, and the sides which have been excavated are much decayed. To the left of the entrance is a small spring, and in front a small tank of tolerable water.

"A few paces from it, to the S. E., is another cave, much decayed and filled up with rubbish. It is about 27 feet long by 21 feet in depth, with 3 small cells, opening off from it.

"There is a tank, now nearly filled up, a few paces beyond this last mentioned cave, to the S. E.

"Retracing your steps, passing the large cave, and proceeding N. W. about 200 paces along the face of the hill, you come to the entrance of another cave which has been very lately cleared of rubbish at the expense of a Bráhma widow lady. It is about 28 or 29 feet square. The roof has been formerly supported by six pillars, of which only fragments hanging from the roof, and corresponding portions of the bases on the floor, now remain. At the back of this cave have been originally four cells, of the same kind as those in the cave first described, but the partitions separating them are much broken. In the further corner on the left hand side, as you stand in the entrance looking inwards, is one such cell, and a bench runs between the cell, and entrance of the cave. Opposite to this cell are the remains of four human figures, and near them a hole of some size running up to what may have been the commencement of a cell over the roof of the cave; but it is now very much injured by time and does not appear to have been ever finished.

"The figures appear to have consisted of two males seated and two female standing figures. The tallest fragment is about four feet high. All are now headless, and in the trunk of each is a hole, such as may have served for the socket of a moveable head. As far as can be judged from what little remains uninjured by time or violence, the proportions of the figures and their execution have been good.*

* Mr. Frere's sketch of these mutilated figures assures us that these caves are Buddhistical.

"A few feet to the west of this cave is another about 22 feet by 15, divided into two large cells, from which open five smaller ones of the kind above described in the large caves. A few paces further in the same direction is the entrance of another cave. It is at present so filled with rubbish that it is almost impossible to creep in, but it appears to be about the same size as that just described, with but one cell opening off from it, and is supported in front by two pillars. Still further west are the remains of two small cells.

"I could discover no remains of inscriptions, nor of stuccoes or painting, nor learn that the people in the neighbourhood had any traditions regarding the place, further than that, like all excavations of the kind, 'it was the work of Pandu,' of much of whose history the scene is laid in the Wáí valley.

2. "On the other side of the valley, at the extremity of the spur which branches off from the Mahábaleshwar Hills near Panchganí and terminates near Báwadhan, are two or three other excavations. They are difficult of access; but they appear from below to be small cells of the kind usually found near Buddhist temples. I had not time to examine them, nor to visit what was described to me as a larger excavation near Rájpurí on the other side of the village of Báwadhan and about eight miles from Wáí.

3. "I may here mention that about twenty-five miles lower down the valley are some excavations in the Hill of 'Pateshwar,' which rises from the south bank of the Krishna, about six miles west of Sátará. They are of no great extent but evidently Buddhist. Unfortunately, however, for the antiquarian, a rich Bráhman Saukár, a generation or two back, undertook to renovate what he considered as a shrine of Mahádeva, and executed his purpose with such liberality in buildings and additions of various kinds as to leave little more than just sufficient to show its real character and origin.

4. "There are said to be excavations of the same kind near Phaitan in the valley of the Koiná in the N. of Chipalún; but I have found no educated native who has ever visited them."

XV. THE CAVES OF KARAD.

These excavations were first brought to our notice by Vishnu Shás-

tri. Mr. H. B. E. Frere, to whom we are indebted for the description now given of those near Wáí, seems to have headed the first European party by whom they have been visited. He has furnished our Society with a remarkably clear and distinct topographical account of them, which, with its accompanying illustrations, will be given in full in our Journal. A general reference to them, is all that at present we are required to make.


The town of KARÁD lies about thirty miles to the S. S. E. of Satará, close on the junction of the Koiná and the Krishna. The caves are found on a terminal spur running off from the Sahyádrí range, and bounded on the north by the former of these rivers and on the east by the latter, after the two streams have been united. They lie along three spiral turnings of a small ridge, at no great height generally from the corresponding valleys, and are divided by Mr. Frere into three series corresponding with these turnings. They seem to be from about two to four miles distant from the town. They form an extensive Buddhist establishment, with at least about fifty distinct excavations, among which are four Chaityas, several Shálas, and a considerable number of Maṭhas and Grihas. The rock out of which they have been hewn, owing to its softness, is not favourable to ornamental sculpture. Only one fragment of an inscription has been found at them ; and it is very indistinct. We are disposed to come to the conclusion, from Mr. Frere's drawings, that they are among the latest works of the Buddhists of the same kind in the West of India. One conjecture we are inclined to hazard connected with them. The Bráhmans of the district to which they belong—the Karáđí Bráhmans—are a sect *sui generis*, who seem never to have had the confidence of their co-religionists, by whom they are accused of having long maintained the custom of annually offering up the sacrifice of a Bráhmaṇ to *Deví*. In the second chapter of the second section of the Sahyádrí Khandá, they are said to have been formed originally from the bones of some camels.* The legend, we conceive, is to be interpreted on the same principle as that which we have applied to the origin of the Chittapáwan Bráhmans connected with Chipalán. They

* According to some of the native *Koshas*, कराड, *Karād*, means a camel's bone.

are probably an accession to the Bráhmaṇhood by conversion, and have merely such local rank as would in all likelihood be assigned to a fraternity of Buddhist priests coming over to Bráhmaṇism in a body.

XVI. THE CAVES OF PANHA'LA'*

In the front of PANHA'LA' about four leagues to the north-west of *Kolhápur*, there is an excavation which has been known both to natives and Europeans for a considerable time. The following account of it was given to Dr. Murray of Sâtará by Mr. Broughton, the Civil Surgeon at Kolhápur, on the 9th May, 1849.

“ It is situated in the fort of Panhá'lá in the face of a large step of amygdaloid, and faces due west. It consists of five chambers opening into one another by narrow doorways; and, each descending about a foot, occasioning the top of the entrance into the fourth chamber to be on a level with the floor of the first. The first is rudely arched and about three yards wide by four long, and not more than two and three quarters high. It contains a raised seat on the right side; that is to say, sufficient of the rock to form a sort of divan is left uncut. The second is a trifle smaller than the first, and has likewise a divan on the right. It opens into the third by a doorway two feet wide by four in height, formed thus ; ^b (a) is the doorway, and (b) the only bit of carving in the cave. The third chamber contains a similar seat on the left side, and is much smaller than the second, and opens into a fourth still smaller. No seat is to be found here; but on each side the rock is hollowed out into recesses, about two feet long; this chamber is only one yard long and one yard wide, and apparently terminates the series, but another doorway again descends into a fifth and much larger chamber, two yards long by three wide; and in the centre is a recess, in the situation occupied by the doors in the other chambers, and behind is a pit four feet deep, cut square into the rock. No figure or carving is anywhere discernible. The whole extent is fifteen yards. The people do not know any thing of the purpose for which the excavations were made.”

* पन्हाळा in Maráthi. The ancient name appears to have been the Sanskrit पन्नागालय *Pannágālaya*, the Abode of the Serpent.

It is by no means certain that this cave at Panhálá has anything to do with either the Bráhmancial or Buddhist religions. The Bráhmans of Kolhápur and the neighbourhood give it the name of the Cavern of *Muchukunda*, the sleepy prince mentioned in the tenth Skanda of the Bhágavata and other Puránas, through the touch of whose robes Káliyavana,—some Bactrian or foreign opponent of Krishna,—was reduced to ashes. But, how this cavern should be in the neighbourhood of Kolhápur and not in that of Mathurá, they do not inform their credulous votaries. Muchukunda's cavern, like that of the seven sleepers, it would appear, has some ubiquitous pretensions. At Panhálá, it is said to be so sacred, that the lizards near it never cheep, and the scorpions never sting.

XVII. THE CAVES OF B'ADA'MI'.

The caves are situated below the hill-fort of BADA'MI' in the Southern Maráthá Country, taken by Sir Thomas Munro in 1818. They are only three in number and are Bráhmancial in character ; but whether they belong to the Shaiva or Vaishnava form of that religion, we cannot precisely make out from any accounts which we have received of them. They most probably belong to the former. They have been often incidentally noticed ; and they are pretty fully described by Dr. Bird, who makes an observation about their similarity of form to some of those at Elorá.* Drawings of their figures are much to be desired, as when compared with others, they may throw light on the origin of that form of Hinduism of which they are the memorials.

XVIII. CAVES IN THE SOUTHERN MARA'THA' COUNTRY UNVISITED BY EUROPEANS.

Vishnu Shástrí says that there are other caves in the Southern Maráthá Country, as for example near the *Falls of Gokák*, at *Kolá-Narsinghpur*, near the village of *Vedepur*, and in the hill called the *Kamal Bheiri* between *Karád*, and *Kolhápur*. If the information which has reached him be correct, we shall have additional evidence of the wide extension and firm establishment of Buddhism in the west of India.

We now return in our general survey of the caves to the part of

* Historical Researches on the Buddha and Jaina Religions, pp. 30—31.

the Sahyádrí range lying north of those series which we have already noticed as contiguous to the road leading between Khandálá and Puná. Only a small portion, we are convinced, of those which exist in this quarter have yet been discovered.

XIX. THE CAVES OF JUNÍR.*

This is a very extensive series of caves, much more so indeed, than any accounts which have yet been published of them would lead us to suppose. We ourselves have been able to make only a very general inspection of them. The following notes of them are principally taken from a communication by Dr. Gibson.

1. In a hill to the northward of the town of JUNÍR is the most complete series of Buddhist caves. We find first one large plain room at the eastern end, which has had a pillared verandah, now destroyed ; and then a series of smaller caves or hermitages. The Chaitya is like that at Kárlá, but much smaller, and has the usual arched roof ribbed with stone, and a Dahgob surmounted by an umbrella, at the inner end. The capitals of the pillars are formed by grouped figures of the lion, the elephant, and the rhinoceros ; and the workmanship is rather elegant. Over the entrance is an inscription.

Beyond this is a large apartment about sixty feet square, having cells on three of its sides. It appears to have had a Dahgob like the caves now mentioned ; but it has been destroyed, and converted by the accommodating Bráhmans into a figure of *Ganapati*, in honour of whom an annual *Jatrá*, or fair, is held at the spot. Further in advance, is a series of plain rooms with separate doors, and good tanks here and there. These rooms seem to have been intended for dwellings ; while the arched cave (of which there is one in almost every set of caves we meet with) seems to have been intended for a place of assembly for worship. There is an inscription on the front of one of these smaller hermitages.

2. Beyond this hill to the eastward, is another hill which contains a series of hermitages, and one arched Chaitya containing the usual emblem ; but, as is seldom the case, it contains no pillars. The

* *Junar* in Maráthí.

front of the arch above the door is rather richly carved, and contains many figures of the Dahgob, and also of a wheel with foliage. Several of the apartments are inaccessible.

3. The third set of the Junir caves is situated in a hill to the westward of the hill fort. They have been much dilapidated by the fall of water from above ; and the fronts of most of them have been destroyed. At each end of the series, is a large square apartment having a range of stone-benches round it and small cells off from it. The temple in this series has a dome supported by plain octagonal pillars, surrounding the Dahgob, which is here quite plain, and not surmounted by an umbrella.

4. On the fort hill, there are many apartments and caves in the scarp of the rock ; but many of them are difficult of access. They seem to be mostly small hermitages. Dr. Gibson examined one series, and found in it a large square apartment, probably of fifty feet, with a lofty roof painted in squares, chiefly of flowers or foliage, the colours of which are still brilliant. This room contains a Dahgob. The other caves in this series are small ; and one of them, at the side of its door, has a figure of a Dahgob in relief, and an inscription.

5. The fifth set of caves is in the hill to the southward of the town. It consists chiefly of detached cells, but has one temple cave, with lofty pillars in front, and arched within, and with the Dahgob of a square form. It may have been left unfinished, on account of the occurrence of a perpendicular vein of lateritious clay. Another chamber, with pillars in front, is filled with mud deposited by the rush of water from above. A gallery to which there is an ascent by steps, contains a range of cells, in several of which are figures of Buddha in a sitting posture. These are a good deal defaced and have been covered over by the Hindus with yellow paint, and are now called by the Bráhmans figures of Bhawání ! The arches of the recesses in which are these figures, are crowned by the bee-hive emblem. Below is seen the figure of the *Hans* (goose), common in Buddhist paintings and carvings, and especially at the present day. In the front of the temple caves, many letters are carved ; but they seem to have been done originally in a very careless and hurried manner, and are now nearly defaced. There is an inscription on the pillars in front of the

temple ; and there is another on the door of a cell, which seems to have been carved with great care, and a third in the pillared apartment now nearly filled with mud.

6. There is another series of caves at some distance in the same hill, having the usual hermitages and temple cave. In the latter the work is rude and apparently unfinished. On the fort hill of Shivanír, are many extensive tanks of fine water carried under ground and pillared. Dr. Gibson considers them co-eval with the temples below.

Some of the inscriptions of the Junír temples, apparently very carefully copied, have been given in the Journal of the Royal Asiatic Society by Colonel Sykes, who also in that work furnishes some valuable notes on the caves to which they belong. * Some of them also, transcribed by Professor Orlebar, are lithographed in Dr. Bird's Researches, in which of one or two of them there is a tentative translation. A transcript of many of the inscriptions by Dr. Gibson is in the hands of the writer of these notes ; but on collating it with the others published, various discrepancies appear, which suggest the propriety of a revision of the whole, or rather of their being taken in fac-simile.

7. In the NA'NA' GHAT, by which there is an ascent from the Konkan to Junír, a large square excavation is found. It is believed, that it was first brought to notice by Colonel Sykes, who has published its inscriptions. Colonel Sykes, there can be little doubt, has correctly indicated the use of this chamber. "It was probably intended as a resting place for persons passing the Ghát, as there is a stone seat all round the bottom of the walls, and some reservoirs of water, and one or two other unfinished chambers are excavated close by. This Ghát, or pass down the mountains, is on the direct line of communication from the ancient Deoghur near Dowlatabad, passing through Joonar with its city of Boodh caves to Callian, known as the Kalliarā of the Periplus, and thence probably the road contained to that other city of Boodh caves on Salsette."† There is a similar chamber, with an image of Ganesha and Hanumán, in the neighbouring Malsej Ghát.

8. Probably connected with the Junír caves, may be a "*monolithic temple*," said to be covered with inscriptions, lately discovered by

* Journal of the Royal Asiatic Society, vol. iv. pp. 281—291.

† Ut supra.

a peon of Mr. Law, when searching for rare plants near the village of TA'RA'MATÍ' above the Gháts to the south of Junír. This temple, as far as is known, has not yet been visited by any European.

XX. THE CAVES OF HARISCHANDRA.

For the following notice we are indebted to Dr. Gibson.

"On the hill of HARISCHANDRA situated above the source of the Mul river, which runs into the Godávári, is a set of temples evidently and also traditionally, of very old date. They consist of a central large one, with the oblong dome still common in Hindu religious edifices. The whole are enclosed by a wall of hewn stone. The workmanship of the temples is elaborate and highly finished. The great temple seems to have been dedicated to *Ganesha*, as a representation of him covers the walls. On one side of this temple is a set of *Caves* with extensive tanks of clear water underneath them. These caves have no carving or images. There is another range of excavations just outside the temple-court; and close by is a large tank having stone steps. At one end is a covered-in verandah, containing figures of *Ganesha*. On the northern face of the peak of the hill, is an extensive range of larger caves, some of them having pillared entrances, the pillars carved but not elaborately. Within these caves, I saw no carving or ornament of any kind save in one a figure of *Ganesha*, of natural or elephant size and cut in relief on the wall. There is here no arched temple, such as we see at Junír and other places."

The caves here mentioned are probably Bráhmálical. *Harischandra* has been long a place of pilgrimage among the Maráthás.

XXI. THE CAVES OF NA'SIK.

NA'SIK is an important place in the Hindu traditions, particularly those connected with the progress of Ráma; and there can be little doubt of its antiquity, as it is mentioned by the name which it now bears in Ptolemy's Geography.*

1. The principal excavations of the place are situated on a hill named from them PA'NDU LENA' about five miles to the S. S.W. of the town and overhanging the Bombay road. When we first had an op-

* Ptol. Geog. lib. vii.

portunity of seeing them,—on the 15th March, 1831,—we wrote thus respecting them :—“They are decidedly Buddhist, and are very extensive. They scarcely fall short in interest, taking them as a whole, of those of Elephanta and Kārīā. The view from them in the direction of the east and southeast, extends for very many miles, and commands the range of some very sublime mountains of the trap or basaltic formation. The figures in the caves are in a state of good preservation. They are those of Buddha. The principal ones have been newly painted and oiled preparatory to an approaching Jatrā. There is nothing Brāhmanical about them; but as there are no Buddhists in this part of India to come near them, the Brāhmins for the sake of their own gain encourage the Jatrā.” When we next visited them,—on the 5th June 1840,—we were particularly struck, without altering altogether our opinion of their Buddhist origin, with the comparatively modern character of their architectural forms, which, though of inferior execution and less ornate, resemble those which have been called the Indrasabhā group at Elorā. They awakened within us a sort of mysterious feeling, which we have only got solved, to a certain extent, by the following notice of the Indrasabhā group in Mr. Fergusson’s interesting paper. “The sculptures to this group have hitherto proved a stumbling-block to antiquaries, and no fixed opinion seems to have been arrived at regarding them. Buddhist they certainly are not, or at all events of so degenerate a type as scarce to deserve that name. Nor are they Brāhmanical; and though they certainly resemble Jaina sculpture more than any other, I do not think they can be correctly ascribed to that sect either, at least as we know it. In no place in these caves do the twenty-four thirthankars appear, nor have the cross-legged figures the symbols which almost invariably accompany these worthies, and are the only means of distinguishing one from another. If, however, I am correct in supposing Jainism to be a sort of compromise between the other two religions, which did not acquire its present form and consistency till after the downfall of the Buddhists, when they were joined by most of that sect who had not embraced the dominant religion, these caves are doubly interesting as showing us the religion in a state of transition from one set of tenets to another.”

Of the age of the Jaina faith, we here say nothing; but that the Nāsik caves must have originated after some revival of Buddhism

following the great victory of the Bráhmans over that faith, and that they belong to some system of transition and compromise, we think evident, not only from their architectural character resembling that of those at Elorá, here referred to by Mr. Fergusson, but from one of their inscriptions forwarded to us by Dr. Gibson in 1836, and also given, from a transcript by H. W. Reeves, Esq. of the Civil Service, by Dr. Bird. That inscription is in Sanskrit, though not of the purest character ; and, though Dr. Stevenson, who has correctly given the scope of it to Dr. Bird, thinks, from his interpretation of its general astronomical date, it points to a construction about B. C. 453, it yet seems evident from its contents as noticed by Dr. Bird, that it indicates such a state of matters as may be supposed to have existed when Buddhism was becoming somewhat assimilated to the rites of the Shaiva Márgís.* It refers very distinctly to the Bráhmans, and several of their distant and proximate holy places, and to several of their customs and legends.

The following notes, from our memorandum book, refer to the details of the Násik caves, which have not yet been fully enumerated. They commence with the northern extremity, or that on the right hand as the visitor ascends the hill :—

1. Unfinished compartment, with a few steps, but without figures. Workmanship modern in appearance. 2. Chamber, with three four-feet figures of Buddha seated, with attendants with *Chawarís* (Tibet cow's tail) and giving their blessing. 3. A square hall, of about seventeen by nineteen paces, with a Dahgob of about thirteen feet projecting from the wall opposite the door and with eighteen monks' cells at the sides. At the corners of the Dahgob are two figures with *Chawarís*. In the front of this excavation are three doors and pillars, one of which is broken. They are supported by six giants (from the breasts upwards) ; and on their capitals are the figures of the heads of bulls, elephants, lions, owls, goats, etc. and of a man and woman. There are two cells in the verandah. 4. A tank ? 5. Four cells of monks, with two pillars and two pilasters in front, on the capitals of which are elephants, cows, lions, and antelopes. 6. Square hall like No. 3, with sixteen cells, and a Dhagob projecting from the wall opposite the entrance. In the middle of the Dahgob, there is a Bud-

* See Bird's Historical Researches, p. 61.

dha wearing a *Shālā* about six and a half feet high, and two female attendants like dancing girls, frequently carved within and without Hindu temples. On the capitals of the six pillars at the entrance are figures of elephants, lions, bulls, and owls' heads. Above the three doors are large inscriptions. 'There are two cells in the verandah, with inscriptions above their doors. 7. An apartment communicating with that last mentioned, with three figures of Buddha, one of which is on an elephant,; one, on a lion, with two small figures; and one squatted, with lion's head with curious ears below. 8. Six cells. 9. A small room, with Buddha seated in the centre, and with two attendants, one of which is destroyed. On the south side, are two small squatted Buddha figures, supported by two men bearing a lotus. Above, there is a room nearly inaccessible, with three figures of Buddha, coarsely painted by the Bráhmans. 10. Room, of about fourteen paces by nine, with a Dahgob near the further end. The roof is curved as if arched. The pillars are seventeen in number, and two of them have inscriptions. There is a *Chawarí* bearer near the door. 11. This is a room of about sixteen by nine and a half paces. It is reached by an ascent of a few steps, leading from No. 10 to the right. It has six cells, at the entrance of one of which the Bráhmans have constructed apocryphal images of Ganesha and Hanumán; and contains a seat cut in the rock of about eight paces in length. It has two pillars, and two pilasters, with figures, like some of those already mentioned, in the front. 12. Large collegiate hall, of twenty-nine by seventeen paces, with a platform, four inches high, for the teacher, and a seat for the pupils running along the excavation, except in front. There are twenty-one cells off this room, but without couches. One of them has a small inscription. Behind, there is a compartment, having an inscription in front with two elegant pillars, and two pilasters, with a Buddha seated as if lecturing his disciples, and two *Chobdárs* with *Chawarís*, and two pages or dwarfs. There are six pillars in the entrance to this hall; but some of them are completely worn away by the action of water. There are two cells in the verandah, and an empty chamber above to the left. 13. A large unfinished semi-circular hall, with numerous figures of Buddha, with attendants bearing *Chawarís*. On the sides are cells with Buddhas. . . In the front are five tanks. For bathing? Is this a place for morning ablutions?

These excavations may not all be of the same age.

2. There is another series of excavated temples near Násik. They are on the hill called RA'MSHEJ; but according to Dr. Gibson they are comparatively of little consequence.

3. There are one or two small chambers in a pass on the road leading between Násik and Chándor.

XXII. CAVES OF PEITHAN.

Násik is one of the *Dharmapuris* or sacred towns of the Godávarí. Toká is a second, in the neighbourhood of which there are several antiquities worthy of examination; and PEITHAN a third. At the last mentioned place there are some caves with inscriptions, which, it is understood, have been copied by Dr. Bradley.

XXIII. THE CAVES OF UNKAT'-TUNKAT'.

There are three series of excavations at the UNKAT'-TUNKAT' pass, about twenty-seven miles from Máligáum on the road to Puná, and adjoining the valley of the Godávarí. No account of them, as far as we are aware, has as yet been published; but they have been visited and examined by several Europeans. Dr. Gibson, who reckons them numerous, furnishes the following notices of some of the more remarkable of them.

1. "Number 1 is in two tiers—the upper of which is a plain chamber with a verandah. The lower room has a door with rich mouldings, and a projecting frontispiece. The figures are chiefly of Buddha in a sitting posture. The interior chamber is supported on pillars having capitals headed by the same Bacchus-like bent figure as at Ankolá. On some of the pillars are figures of Buddha, with attendants making offerings. Inside the apartment is a shrine, but no figure remains. No. 2 is likewise of two flats. The upper has a well-cut lozenge screen in front, and at each end of it grotesque figures of the lion, as seen at the present day in Chinese and Burmese images and pictures. In the lower apartment verandah, at each end, are figures of Buddha 8 feet in height, having a tiara on the head and angel-like figures supporting a canopy, and the lotus above. Among the attendant figures we see the crocodile very distinctly. The interior of the

room is much as in that last mentioned. No. 3 consists of one large apartment, with a spacious verandah screened by lattice-work. At one end of this verandah, is a large upright Buddhist figure half-buried in the earth. There is no tiara as in the other figure. The hair is woolly and the features are African, and the attendants are with *Chawaris* and musical instruments. These are females, as is the principal figure, with very prominent breasts. At the opposite end of the verandah is a male figure of similar size, having a tiara or conical cap; but this image is half decomposed. The inner apartment of this cave is supported by pillars, massy and of good proportions, having carved on them figures of the *Hans* and a Satyr-like head. There is a central ornament of the ceiling of this apartment, of the size of a cart-wheel and containing many groups of figures in good preservation. The outer row of figures consists of persons riding, some on the lion, others on elephants and some on bullocks, the latter being in pairs. The inner row of figures consists of musicians. Their features are African, and they have flattish head-dresses like Welsh wigs. At each end of this room is a figure of Buddha bare-headed but having a tiara supported above his head by the trunks of elephants. There is here also an inner shrine; but the image has been thrown from the pedestal. The remaining six apartments contain nothing particularly worthy of note, excepting that in one half-choked cave are many Buddhist images carved in the wall. In none of these caves is the bee-hive like emblem to be seen. The carving of the figures is generally more carefully and nicely executed than in any of the caves I have seen elsewhere.

2. "In the hill of UNKA'I' close to this, and within the upper fort are several other caves; but the images have been greatly broken and defaced. On the top of both these hills, and also below the scarp, are very extensive tanks seemingly co-eval with the caves.

3. "In a hill forming the opposite side of the Unkái pass is a celebrated place of Jatrâ, the deities being Goraknâth and Muchandar-nâth. In the high and steep scarp of the rock is a cave rudely hewn, but bearing marks of art. It extends about 60 feet into the body of the hill, and at the farther end is a small image such as we usually see stuck up about village temples. Still higher in the perpendicular

scarp and accessible only by a four inch path, is the other figure Muchandarnáth. Regarding this figure I contented myself with a verbal report. It is described to be an image sitting cross-legged on a low chair or throne, and is doubtless Buddhist."

Some of the figures in these caves seem worthy of delineation.

The caves of Elorá, and those in their neighbourhood, would now, in the order of their geographical position, fall to be noticed ; but for obvious reasons we pass them over for the present.

XXV. THE CAVES OF AJANTA'.

This is by far the most important series of Buddhist caves, which has yet been discovered. It is situated in a ravine in a range of hills separating the province of Khándesh, from that of Aurangábád, and near the well-known town of AJANTA' and the Ajantá pass, which have been particularly brought into notice in connexion with the battle of Asáí in 1803. The excavations, which are situated in the wild ravine of LENA'PUR, which derives from them its name, were first mentioned, on the authority of Col. Morgan of the Madras Army, in Mr. Erskine's excellent paper on the "Remains of the Buddhists in India," published in the third volume of our transactions. A short account of them, scarcely however adverting to their peculiarities, was read before the Royal Asiatic Society in 1829, by Lieut. J. E. Alexander, who had visited them about five years previously.* Colonel Twemlow, Captain Gresley, Mr. Ralph, and other officers of the Nizam's Service, have the credit of directing the attention of the residents in Western India, to their varied wonders.† A somewhat interesting and correct topographical account of them, was published in the Bombay Courier by a very faithful and zealous observer, the late Lieut. Blake, which has since been reprinted in a pamphlet published at the press of the Bombay Times. To Mr. Fergusson, we are indebted for the first critical account of them. Many of their figures are delineated in the work of Mr. Bird, who describes them in detail.

The interest of these caves consists not only in their number and magnitude, but in the variety of their age, extending probably from the third or second century before to the fifth or sixth century after

* Transactions of the Royal Asiatic Society, vol. iii. pp. 62—70.

† See particularly a lively paper by Mr. Ralph in J. B. A. S. vol. v. pp. 557—561.

Christ, in the comparative beauty of many of their multitudinous architectural forms, and in their many wall and ceiling paintings resembling fresco, highly illustrative of the state of ancient Indian society, and the geographical relations of India, of which so little is otherwise known. They unequivocally show that though the Buddhist monks considered it expedient professedly to retire from the bustle of the world, and to shut themselves up in the prison of a narrow chasm, they took care to surround themselves with the representations of the pomps and vanities of the world, either for their own delectification or the attraction of their disciples. Through the efforts of Colonel Sykes, the Ajantá caves have already attracted the attention of the Court of Directors of the East India Company ; and Captain Robert Gill of the Madras Army has been commissioned to delineate their architectural and pictorial remains, with which he is at present engaged. The fruits of his labours are already to some extent visible in the museum of the Company in Leadenhall street ; and they are there considered to be among the most precious curiosities collected from the distant east. The inscriptions at Ajantá are not numerous, and some of them, at least, appeared to us when we examined them to be not of the same age as the excavations to which they are attached. They are not in the best state of preservation. They have been several times copied, but they require to be carefully taken in fac-simile. It is extremely probable that other groups of caves remain to be discovered in their neighbourhood, which, from representations made to the writer of these notes when visiting it, appears to have been but little explored by Europeans. It is probable that it is Ajantá which is referred to by Ptolemy under the name of "Sazantium," and mentioned in connexion with "Ozene," "Tiagura" (*Devagiri*), "Nasica," and other places in the neighbourhood of these towns which can be identified.*

XXVI. THE CAVES OF BA'GH.

These caves were first brought to notice in connexion with the residence of Sir John Malcolm in Central India. They are situated about three miles from the village of BA'GH, on the road leading from Gujarát to Malwá, in a ravine penetrating the hills forming the northern

* Ptol. Geog. lib. vii.

boundary of the valley of the Taptí. Lieut. Dangerfield's account of them in the first volume of the *Bombay Transactions*, which forms a very interesting article, notices four of them, of which two are in good order. Some others, however, we believe, have been lately discovered by Mr. Impey, of the Bombay Medical Service, at present Surgeon to the Residency of Indúr, who has promised to bring them to the notice of the Bombay Branch of the Royal Asiatic Society.

From the drawings attached to Lieut. Dangerfield's paper, these caves do not appear to be of the oldest type. Mr. Fergusson notices the existence of the *Dakgob* without a *Chaitya* as a peculiarity; but it will have been seen, that we have other examples of this in the caves lately discovered.

XXVII. THE CAVES OF DHUMNÁR.

These caves are situated about a mile from the village of CHANDA-WA'SA', and about forty miles south-east from Nimach. They are numerous; but owing to the want of depth in the scarp in which they are formed, they are of a diminutive size. They are among the most modern and least interesting of the rock-cut temples. A monolithic Bráhmānical Temple is in their neighbourhood. They have been described by Col. Tod and Mr. Fergusson, whose notices of them appear to answer every practical purpose. Mr. Fergusson recognizes in them a "tendency to Jainism"; and Colonel Tod's Jaina Gúru identified them as such.*

XXVIII. CAVES IN GUJARAT.

Dr. Alexander Burn, to whom the antiquarians of India are indebted for the discovery of some valuable copper-plate charters deciphered

* Referring to one of the principal groups of these Caves, Colonel Tod says, "Fortunately I had my Jaina Gúru with me, who gave me more correct notices of these groups than the local *cicerone*. All these figures are representations of the deified pontiffs of the Jains, and the group of five are the most celebrated of the twenty-four, and distinctively called the Panch-Terooti; viz. Rishubdeva, the first; Suntnath, the sixteenth, Nemnáth, the twenty-second; Parswanáth, the twenty-third; and Mahavíra, the twenty-fourth. Each has his separate Mount (teerut) or place of pilgrimage; and each is recognized by his symbol, viz. the bull, black antelope, conch-shell, headed-serpent, and tiger."—Tod's Rajasthan, vol. ii. p. 724.

and translated by Mr. Prinsep, mentions that he has heard of the existence of some Cave-temples on the banks of the Nirbadá about thirty miles above Baroch, and also of some others in the Collectorate of Kairá. It is very desirable that they should be examined. They will probably be found in the eastern hills of the province to which they belong, as cave-temples are not to be expected in the lower parts of Gujarát.

From the continent of Gujarát, we pass over to the Gujarát peninsula, or Káthiáwád, the Sauráshtra of the ancients. It possesses very remarkable antiquities, some of which will afterwards fall to be noticed; but it has only two series of excavations to which as yet we can point attention.

XXIX. CAVES OF TALAJÁ.

These caves we first heard of from Henry Young, Esquire, of the Bombay Civil Service, when in the province to which they belong in 1835. We were lately informed by the Rev. Mr. Wallace, who has examined them, that they do not seem to be possessed of any distinctive religious character. They are situated in a remarkable conical hill on the southern bank of the Setranjí river, near the village whose name they bear. They are described as numerous. In the first Number of our Journal, Captain Fulljames, who has occasion to refer to them, says, "There is one large room measuring 29 paces by 23 paces; in height it is about 20 feet with a flat roof: this has originally been supported by four large square pillars, as may be seen by the marks on the ceiling, and also on the floor. There are numerous others, but much smaller. Some of them have been used for cooking, some for sleeping rooms, but by far the greatest proportion are reservoirs holding the purest rain water, and small channels are cut all over the hills for conveying the rain water into these reservoirs as in the caves of Kanary near Bombay.* Not an ornament or an inscription of any kind could I discover, though I hunted long and diligently for them. Still some other person may be more fortunate, and I really think it worth the while of any person, who can spare the time, to explore

* Journal of the B. B. of the R. A. S., vol. i. p. 32.

them."* They seem, as far as yet noticed, to be analogous to those at Panhá[á].

XXX. THE CAVES OF JUNA'GAD.

During the month of March 1850, when on a hasty visit to Junágad, and the adjoining GÍRNA'R along with the Rev. Dr. Duff, and the Rev. James Glasgow, we ascertained to our satisfaction, by a personal inspection, that the caves adjoining the *Uparkot*, so remarkable for its antiquities, consist of a Buddhist *Vihár* and its usual appendages. Capt. Postans, in his Notes of a journey to Gírnár, published in the Journal of the Asiatic Society of Bengal, Oct. 1838, says of these caves, "The excavations, of which there are several at the base of the *Uparkot*, are made in the face of the same soft stone, and consist in some of three or four low apartments; in others there are as many as six, with a large or principal one in the centre. These apartments are small, flat-roofed, and supported by square pillars without ornament; the entrances to many are through small and low door-ways, but the greater number are quite open. These places are said by some to have been the haunts of a tribe of robbers called *Kaphriás*, and it is a curious coincidence, that an inquiry respecting some similar excavations in a sandstone hill, which I observed near *Lakhpat* at the western extremity of *Kach*, I was told exactly the same story. In the neighbourhood of Buddhist records, any thing approaching to a *Vihára* becomes of great interest; but I fear the very soft nature of the stone from which these are excavated, will not allow of their being considered of any great antiquity. I may however be mistaken in this, and perhaps my sketches of one or two of these caves may assist in determining, how far they are worthy of being considered ancient. In one was the following inscription, 'ΣΗΛΙΚΗ 'ΑΛΙ', the servant of the servant of God, took up his abode in this place, in the year H. 940'." Of the drawings here referred to, Mr. James Prinsep, the Editor of the Journal, says, "The Sketches sent by Lieut. Postans appear to establish his theory, that the caves were heretofore *Viháras* of a Buddhist monastical establishment; but they exhibit nothing curious or unusual, being similar

* Can it be from these tanks that the village receives the name which it bears ?

in every respect to those found at *Dhauk* in *Katak* and the number of other plates of this article compels us to omit them.* The stone in which the caves are found, though easily wrought, is of a durable character; and the workmanship in them, though plain and simple, is undoubtedly ancient. A small inscription which they bear, in the very oldest form of the Gírnár tablets, only a few hundred yards distant from them, seems to have escaped the attention of Captain Postans. A specimen of it is given by Colonel Tod in his *Travels*.*

The existence of these ancient Buddhist caves in this precise locality, is a fact of the greatest importance, as will appear, when we come to speak of the character of the Gírnár rock inscriptions.

XXXI. THE CAVES OF LAKHPAT.

The only authority which we have for the existence of excavations at this northern extremity of the province of *Kach* adjoining to *Káthiáwád*, is contained in the extract from the paper of Captain Postans quoted in the preceding notice. We make a separate entrance of them here, that attention may be directed to them and their exact character ascertained.

XXXII. THE CAVES OF SEHWAN.

During a late visit to the banks of the Indus, we were informed by Captain Partridge, a diligent observer, that there is a small excavated temple, *Ek-thamb*, or the one pillared, between the town and bandar of SEHWAN, much revered by the Hindus, but at present in the possession of the Muhammadans. We had an opportunity of inspecting it. There can be no doubt that it is of great antiquity; and that it is more like the work of the Buddhists than the Bráhmans. There are said to be some ancient excavations at *Rani-ká-koṭ*, in the hills further to the south, which are not to be confounded with the works there of one of the late 'Amírs.

Sehwan is one of the most ancient towns in India which can be identified. It is the "Sindomana, the metropolis of Sambas," or Sabbas, of the historians of the expedition of Alexander the Great.† We

* Tod's *Travels in Western India*, p. 368.

† Vid. Arrian de Exped. Alex. lib. vi.

lately ascertained from the learned Bráhmans of the locality, that it is the *Shawír* of the Mahábhárata and the Puránas, a locality which our best orientalists have not yet been hitherto able to identify. We may here mention, in passing, that the same Bráhmans told us that according to the local legends which they have in the Sanskrit language, Kábul is the ancient *Shishapálapura*; Multán, *Praládpur*; Thátá, *Deval*; and Haidarábád, *Neran*, and more anciently *Patolpuri*, or the city of *Patola*, doubtless the *Pattala* of Arrian, of which they had never heard. The last of these identifications is particularly worthy of notice, as it agrees with that formed, on purely geographical considerations, by Sir Henry Pottinger in his excellent work on Beluchistán and Sindh, which unfortunately has been long out of print. It is quite adverse to the opinion which has been current since the days of Dr. Robertson, who would identify Thátá with Pattala, even though it cannot be urged that the delta of the Indus, referred to by Arrian, commences at or near that city.

XXXIII. THE CAVES OF BAMIAN.

These caves, which are situated in the outposts of the Hindu Kush, or Caucasus in Afghanistan, on one of the principal roads leading between Ghazní and Balkh, are exceedingly numerous. Somewhat exaggerated accounts of the gigantic idols, which are their appendages, have been given by several Muhammadan authors. To the late Sir Alexander Burnes, we are indebted for the first precise notice of them. "Bamian is celebrated," he says, "for its colossal idols and innumerable excavations, which are to be seen in all parts of the valley, for about eight miles, and still form the residence of the greater part of the population... A detached hill in the middle of the valley is quite honeycombed by them. Caves are dug on both sides of the valley, but the greater number lie on the northern face, where we found the great idols: together they form an immense city.... These excavated caves, or houses, have no pretensions to architectural ornament, being no more than squared holes in the hill. Some of them are finished in the shape of a dome, and have a carved frieze below the point from which the cupola springs. There are excavations on all sides of the idols; and below the larger one half a regiment might find

quarters.”* Mr. W. Erskine had long before the visit of Captain Burnes to Bámián hazarded the statement of his opinion, that the remains at this place are probably Buddhist.† The observations of Burnes, Masson and others have evinced its correctness.‡

It is a remarkable fact, that it was by the extension of Buddhism to Bactria and its neighbourhood that the Alexandrian divines, Clemens and Cyril, became acquainted with its existence.§ Through this line in particular, Buddhism seems to have come in contact with Christianity and encouraged its corruption by the introduction of the monastic institution.

XXXIV. CAVES IN THE VALLEY OF JELÁLA'BÁD.

Connected with the numerous *Stúpas* or “Topes” and other Buddhist remains in the valley of Jalálábád in Afghanistán, as at DURANTA, there are many caves, which are noticed, on the authority of the observant and enterprizing Masson, in the *Ariana Antiqua* of professor H. H. Wilson, which casts so much light on the antiquities of the provinces of which it treats. These “Caves,” it is there said, “are always lined with cement, but are otherwise devoid of ornament. Some of them have a recess at their upper extremities, a feature also to be remarked in many caves at Bámián. The domed caves or temples only have, in some cases, been surrounded with belts of mouldings or distinguished by ornaments at their apices. The most interesting of the Daranta collections of caves is that attached to Tope Gudára, and excavated in the scarped front of the eminence confining the river on which that structure stands.”|| It is not improbable that similar caves may be found in the newly acquired British territories of Pesháwar, where some Buddhist remains are known to exist.

A most able and philosophical digest of all that is known of these

* Travels into Bokhárá, vol. ii. pp. 158-9.

† Transactions of the Bombay Literary Society vol. iii. p. 518.

‡ A couple of papers by Mr. Masson on the Bámián antiquities are in the Journal of the B. A. S. for 1836.

§ Clemens Alex. Strom. lib. 1. p. 239; Cyrill. Alex. ii. p. 133. These passages have been referred to by Dr. F. Buchanan and Mr. Erskine.

|| *Ariana Antiqua*, p. 98.

interesting regions, both from ancient authorities, oriental and occidental, and modern research, and which should be in the hands of every observer, is to be found in professor Lassen's "Indische Alterthumskunde."

Passing over all the Buddhist excavations and other ancient remains which are to be found in the provinces with which the Bombay Presidency has little intercourse, and which properly fall to the consideration of our learned and zealous friends in Bengal, Agra, and Madras, we now return to the caves of Elorá and their contiguous groups, which we have purposely reserved to the last.

XXXV. THE CAVES OF AURANGÁBÁD.

The caves of Aurangábád are situated in the hills lying to the north of that city. Their existence has been long known to Europeans; but the first printed account which we remember having seen of any of them is in the work of Dr. Bird, who notices four of their excavations. They belong to the Buddhist faith. Mr. Ralph, and other residents at Aurangábád, have seen a good many more near the same locality; and Colonel Twemlow, the Brigadier of the station, lately mentioned to the writer of these notes, that so numerous are they that very few hunting parties go out on an excursion without discovering some which are new to Europeans. It may be safely concluded, that there is yet a large field of discovery in this quarter, which, from its proximity to Elorá, must have special interest.

XXXVI. THE CAVES OF DAULATÁBÁD.

The excavations of Daulatábád, the writer of these notes is persuaded from a partial inspection, are not altogether military, as is commonly supposed. At the entrance of the celebrated excavated ascent to the fort, where the scarp of the rock occurs, some pillars resembling, or rather identical in form with, those of the cave-temples, are visible, and more would probably be discovered, were this part of the excavations cleared of rubbish. The ancient name of Daulatábád, *Devagiri*, the "hill of God," the "Tiagura" of Ptolemy, favours this supposition, which is recommended to the notice of those able to make research in this interesting quarter. General Fraser, the Resi-

dent at Haidarábád, has already offered to procure for observers all needful assistance from the Nizám's Government.

XXXVII. THE CAVES OF ELORA'.

The Caves of VERU'L or ELORA', it is superfluous to observe, are the most famous in Western India. The first considerable and tolerably correct, though not minute, account of them which we have, is that by Sir Charles Malet, published in the sixth volume of the *Transactions of the Asiatic Society of Bengal*. The imperfection and inaccuracy of the drawings, made by a native, accompanying that article, are compensated for by the superb delineations of Mr. James Wales. Colonel Sykes's paper on these Caves in the third volume of the *Bombay Transactions*, is one of peculiar accuracy and interest. Particular figures or groups of figures, have been represented and criticised by Colonel Sykes, Captain R. M. Grindlay, and Colonel Tod.* Mr. Fergusson's notes upon the caves, in the article already referred to, are most valuable, both in an architectural and antiquarian point of view. Dr. Bird's notices of them, which are of considerable length, form the most valuable part of his *Researches*. To the student and general observer, they possess special interest, not merely because of their number and magnitude and comparative excellence of workmanship; but because of the varieties of the form and use of their several groups, devoted as they respectively are to the Buddhist, Brahmanical, and Jaina religions. They are generally surveyed from north to south; but Mr. Fergusson has suggested, that the reverse order is the more appropriate, as the spectator thus sees them in the order of their formation, the Buddhist, at the south, being the most ancient, the Bráhmanical, in the centre, being next in point of antiquity, and the Jaina, at the north, being the most modern. The hint of Mr. Fergusson was acted upon by Messrs. Smith and Murray and the writer of these notes in a visit paid to them in August 1849; and they observed certain imitations in the workmanship of the three divisions, all bearing testimony to the soundness of the opinions which he has expressed.

* *Transactions of the Royal Asiatic Society*, vol. ii. pp. 326, 328, 487. *Journal of the Royal Asiatic Society*, vol. v. p. 81; viii, pp. 73.

It is a remarkable fact that no *ancient* inscription has yet been discovered at the Caves of Elorá;* and it is only by referring to their position, and by comparing them in an architectural point of view with similar works elsewhere, that any opinion can be formed of their comparative antiquity. Though the southern Buddhist group has a special interest in the second and third stories of some of the Viháras, its Chaitya is not worthy to be compared with that at Kárjá; and it is now robbed of its painted figures, if indeed they ever existed. We are inclined to believe that it may be the oldest Buddhist establishment to be found in the West of India. It is, comparatively speaking, in an open country, while the other establishments are principally in mountain recesses, which would likely not be penetrated till the Buddhist faith had made some progress in the adjoining districts. It is of great extent and of general simplicity; and it is evidently the nucleus around which, as an ancient undertaking, the other excavations, Buddhist, Bráhmancial, and Jaina have been aggregated. We venture to attribute it, with all the older Buddhist works of a similar kind, to imperial patronage, to the sovereigns of the Magadhí line, with their Ceylonese allies, who made such efforts to propagate Buddhism during the three or four centuries which preceded the Christian era. The following passage of the *Mahavanso* precisely mentions the commencement of the Buddhist missionary efforts in the Maráthá country and other districts which we have been called upon to notice in this paper. After recording an embassy of the Ceylonese Devánánpiatisso to Dhammasoka of Magadhá, and the intimation of the latter to his messengers that he had taken refuge in Buddha and that Devánánpiatisso should follow his example, it thus proceeds:—"The illuminator of the religion of the vanquisher, the thero [patriarch, in Ceylon] son of Moggali,

* An apocryphal Devanágari inscription is given by Colonel Sykes. Dr. Bradley has forwarded to our Society copies of some other inscriptions which have probably hitherto been overlooked. These have been examined by Dr. Stevenson, who has found in one of them, from the Chaitya cave, an imperfect copy of the famous Buddhist formula expounded in the fourth volume of the *Journal of the Asiatic Society of Bengal* by Csoma Corose, Dr. Mill, and Mr. Prinsep. This inscription, Dr. S. supposes, from the form of the letters, to belong to the ninth century of our era. It certainly does not appear older. It must have been written long posterior to the formation of the Chaitya in which it is found.

having terminated the third convocation, was reflecting on futurity. Perceiving (that the time had arrived) for the establishment of the religion of Buddha in foreign countries, he dispatched severally, in the month of 'Kattiko' the following theros to those foreign parts. He deputed the thero Majjhantiko to Kásmíra and Gandhára [Kandahár], and the thero Mahádeva to Mahisamandala [Mysore]. He deputed the thero Rakkhito to Wanawási [in the north of the Karnátik], and similarly the thero Yona-Dhammarakkhito to Aparantaka. He deputed the thero Maha-Dhammarakkhito to MAHA'RATTA; the thero Mahárákkhito to the Yona [Bactrian] country. He deputed the thero Majjhimo to the Himawanta country; and to Sowanabhúmi, the two theros Sono and Uttaro."* Devánánpiatisso, we shall by and by have occasion to notice in another connexion. The accession of Devánánpiatisso, whose capital was Anurádhapura in Ceylon, is dated by Mr. Turnour at 307 B. C. He reigned forty years.

Mr. Fergusson has made the important discovery that the Bráhmanical *Kailás*, which strikes the beholder as the most remarkable of the whole, is formed after the type of some of the structural temples of the south of India, particularly the great pagoda at Tanjur; and he says, "I have no doubt in my own mind that the Chola, or at least, some of the Karnata rajas were the excavators of this temple, and the restorers [rather propagators] of Sivite worship in the Dekhan; my own impression is, that we must ascribe this either to Raja Rajendra or Keri Kala Cholan, and that consequently the date given by Mír Ali Khan to Sir Charles Malet is very near the truth, if applied to this excavation at least, and that it was made in the first half of the ninth century of our era." Works of such magnitude as the Kailás temples would require the wealth and enterprize of such sovereigns as the Cholás were. The resources of the local princes, the Chálukyás of the Dakhan who preceded them, and of the Devagíri Rájás who followed them, were quite inadequate to their execution, and that of the Elephanta and other Shaiva temples near Bombay. Somewhat posterior, in point of age, to Kailás must be those Bráhmanical temples of Elephanta and Salsette, in which various imitations of the Bráhmanical

* Mahavanso by Turnour. p. 71.

excavations of Elorá appear. Looking at them collectively, we have long, on mythological grounds, been disposed to limit the age of the Bráhmānical excavated temples by the eighth or ninth century after Christ. On several of their figures, the small box, containing the emblem of Shiva, worn by the *Lingáits* is represented, and the *Lingáits* did not appear in the south of India till considerable modifications were made in the course of time in the peculiar forms of Shaivism introduced or supported by Shankar A'chárya. The Choló rájas were the patrons of the *Lingáits*, who, to the worship of Mahádeva or Shiva, add the practice of the *Yoga*, without reference to caste, with a view to final emancipation. Professor Wilson notices the profession of the *Yoga* in the eighth century, and he properly observes that the Bráhmānical temples in the subjects of their sculptures, and the decorations of Shiva and his attendants, belong to the same sect.* It is remarkable that this form of the Hindu religion has vanished from the Maráthá country, which it is not likely it would have done, had it enjoyed the continued patronage of the Devagiri Rajas, reigning over this locality, the last of whom was overcome by the Muhammadans A. D. 1293.

There are evidently imitations of parts of Kailás in the northern group of Caves at Elorá, commencing with the series nicknamed the Indrasabhá. These, then, must be posterior in point of execution to the first half of the ninth century. We agree with Mr. Fergusson in thinking that some of them, as stated in a passage which we have quoted from him in connexion with the Násik caves, belong to a period of transition; but others of them, we hold, both from their figures and em-

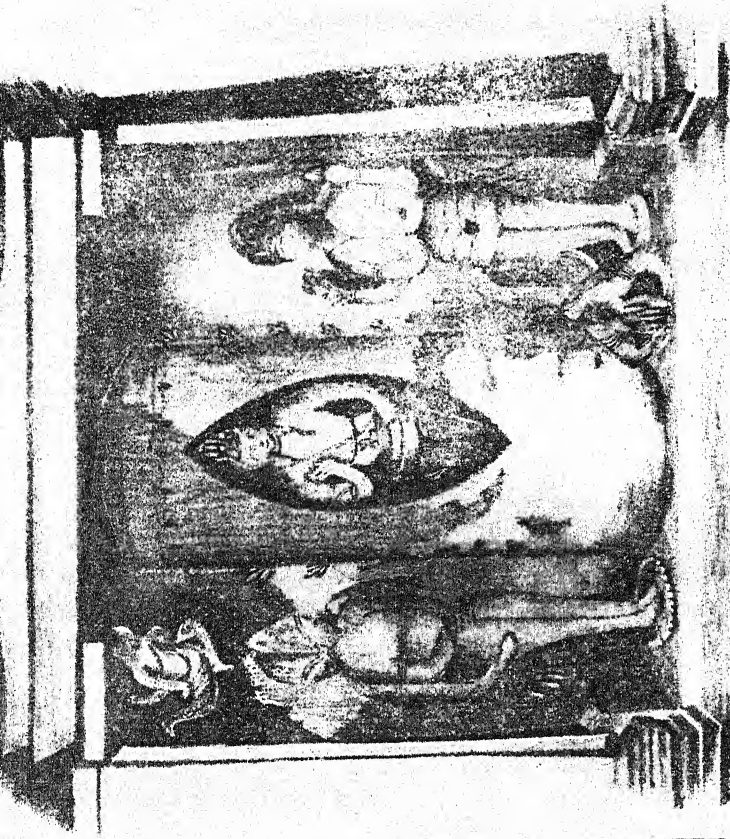
* Transactions of the Bengal Asiatic Society, vol. xvii. p. 188. Mr. Wilson adds in a note :—" In the temples of Salsette, Elephanta, and Ellora, the principal figure is mostly *Siva*, decorated with ear-rings, such as are still worn by the Khanphat *Jogis*; the walls are covered with ascetics in the various *dsans* or positions in which the *Yogi* is to sit; a favourite subject of sculpture at *Elephanta* and *Ellora* is the sacrifice of DAKSHA disconcerted, and the guests, though saints and gods, put to rout, bruised and mutilated, by VIRABHADRA, and the *Ganas* of *Siva*, in revenge for that deity not being invited, a story told in most of the *Puránas* which inculcate the *Yoga* tenets. The cells attached to some of the temples are also indicative of *Jogi* residence, and one of the caves of *Salsette* is named that of *Jogiswara*, or *Siva*, as lord of the *Jogis*."

blems, to be decidedly the work of the Jainas, by whom at this day some of them are claimed, as that called *Párasanátha*. These Jaina excavations are probably the workmanship of the opulent Jaina ministers of the Rajput, Elichpur, and *Devagíri Rájás*. They are probably not older than the eleventh or twelfth centuries, when the Jainas of Western India made great efforts, as they are now doing, to extend their faith.

Many of the Buddhist figures at *Elorá* and elsewhere are quite intelligible from the papers of Mr. Hodgson, standard authorities in the exposition and history of that faith. A Hindu pantheon, it has been said, might be constructed from the *Bráhmanical* figures, some of which, like that of the *Nṛisinha avatára*, here represented, differ from those ordinarily current throughout the country. Their full delineation would be useful to the student. The moral exhibition which they make, like that of the other systems with which they are associated, is of a very humiliating character. Even overlooking their position as idols,—objects of a degrading and misdirected worship,—they have nothing of the dignity, purity, delicacy, and beauty which we associate with right views of religion. As works of art, even the best executed of them are quite unworthy of the architectural elaborations by which they are enshrined.

Information respecting the Cave-Temples and Monasteries of India in general, we may remark, in concluding this section, is particularly desiderated in connexion with the following matters of observation :

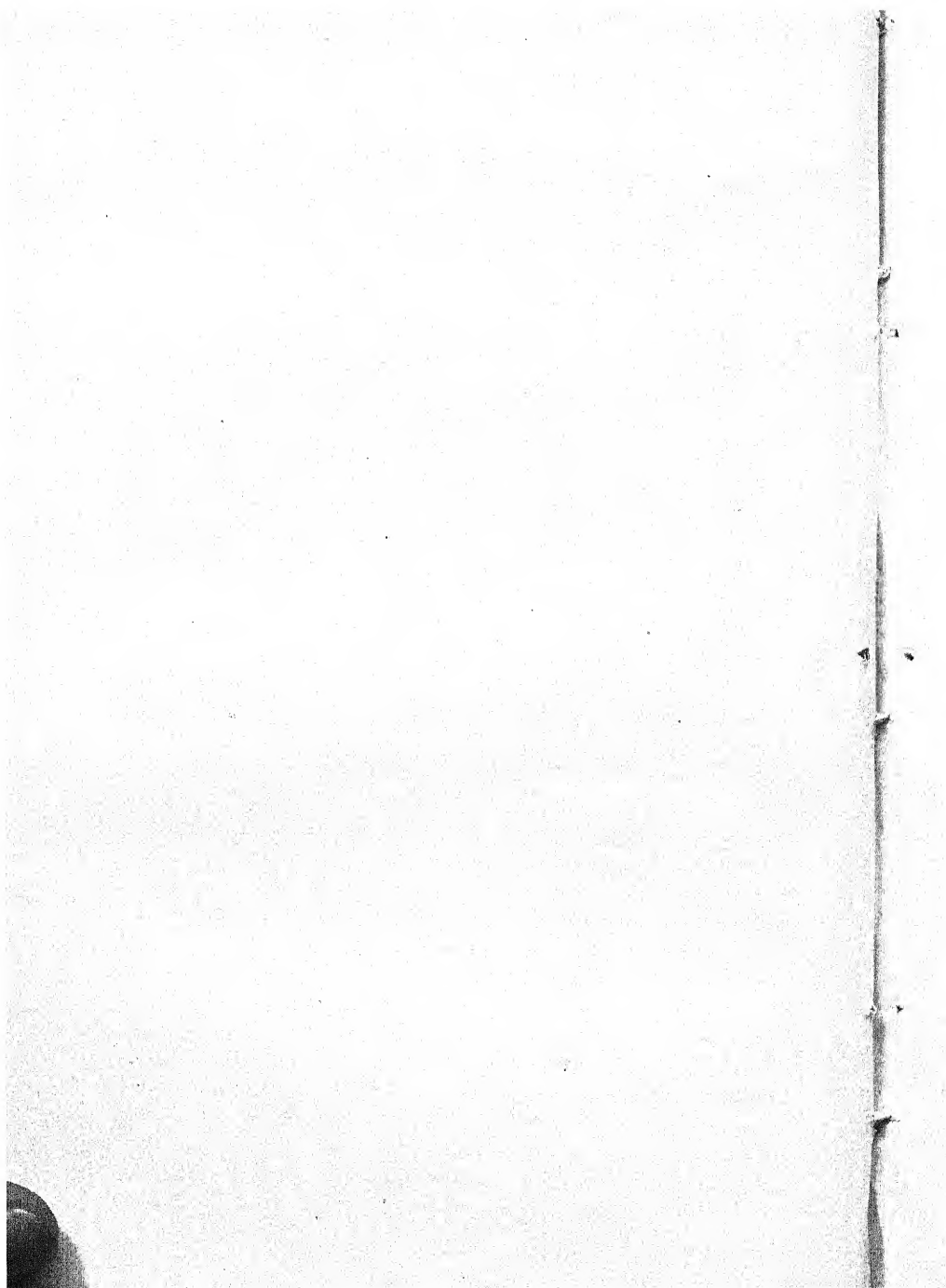
1. Their position, size, and numbers.
2. Their form, dimensions, and religious character.
3. The peculiarities of their architecture, as illustrative of their age, and the progress and history of art.
4. Their inscriptions, original and apocryphal, of which both copies and fac-similes are needed.
5. Their mythological figures in their forms and attitudes, and their general mythological and moral import.
6. Their ornamental figures.
7. Their contiguity to other groups.
8. The light in which they are viewed by the natives, who inhabit the localities in which they are situated.



NṚSINGHA AVATĀRA (ELORĀ).



NṚSINGHA AVATĀRA (TOKĀ).



STRUCTURAL TEMPLES.

In connexion with the ancient STRUCTURAL TEMPLES in the different provinces of India, a boundless field of research is open to the antiquarian. Those of them which are illustrative of the religious history of the country are primarily worthy of notice. The most remarkable of this class are remains of BUDDHIST TEMPLES COEVAL WITH THE CAVES. Several such temples have lately been brought to notice.

At Ankolá, situated on the Prawará river which falls into the Godávari near Toká, is a very ancient temple which is said to have been buried for an unknown period till struck by the plough of a Kunbí about 80 years ago. "It is," says Dr. Gibson, "in the form of a cross with large central and smaller side domes and porticoes, and having ranges of pillars running from the sides of each portico to the central dome. The whole of the pillars, roof, etc. are most elaborately and minutely carved, with rich foliage in festoons, and with heads similar to those you see depicted of the ancient satyrs, and other figures dancing and playing on instruments. The capitals of the pillars are square; and on each side of the square is a Bacchus-looking figure, bent as if in the act of supporting the super-incumbent weight of the roof. The effect of the whole is very elegant, without the heaviness too often attendant on excess of ornament. On the side of one of the veranda pillars is a long inscription in the Sanskrit character. I regret I had not time to copy it. Attached to the temple are the remains of a built tank, a *dharmashála*, etc. such as we usually see attached to those ancient buildings. Some ancient authors describe the Indians as worshippers of Bacchus. May not the similarity of decorations in temples like this, and of the ceremonies which we may suppose to have been performed in them, the music, dancing, etc. have led to this supposition? There are many mounds of earth round the town of Ankolá, and it is possible some of these may contain other remains."

"The great temple of TRYAMBAKESHWAR," writes Dr. Gibson, "the various extensive built tanks in and around the town,—some of them having colonnades with many carved figures,—are asserted by the Bráhmans,—and their assertion is verified by the general appearance of the buildings,—to date from a very ancient period. Many of

them, however, have been repaired in subsequent times, and many altogether renewed. The period of their origin they state to be that of the Shepherd Kings.*

"Five miles from Tryambak is the hill fort of ANJANA' or ANJANI'. Below it are the remains of temples very extensive and very highly finished. They seem to have been in their present ruined state for several hundred years. These, too, are said to date from the time of the Shepherd Kings and to be more ancient than those of Elorá. In the centrepiece of the door of all of them is a figure of Buddha in a sitting or a standing posture, having the hooded snake as a canopy, and surrounded by rich foliage and highly finished cornices. In one, and only in one, could I find an image of Buddha still remaining. It is of a large size and in the usual cross-legged posture. There have been many others, however, but they are thrown down and broken. Among the ruins of some others, I saw figures of Ganesha and the Linga, as worshipped at the present day; and the temples in which I observed these latter seemed to be of the same date as the others. From one of those having Buddhist figures, I copied a long inscription in the Sanskrit character and in excellent preservation, a copy of which I had also the pleasure to send to Mr. Wathen in whose hands it now is.

"Adjacent to the town of SHINAR,† situated on a river which runs into the Godávarí, there are more extensive remains than I have seen at any other place. One temple is entire, and has the oblong dome at one end, but is in other respects very similar in workmanship and figures to the temple at Ankolá, except that it is more lofty and on a larger scale. Over the doors, are figures of Buddha. In the spacious walled court which surrounds this temple, are several smaller ones of workmanship equally elaborate. Of the groups of human figures here, dancers and musicians are the most frequent. On the western side of the town are the ruins of three other temples equally rich.

* By these Shepherd Kings, we presume Dr. Gibson means the chiefs of the Gavalis, or herdsmen, a tribe of wandering Aborigines, often referred to by the Maráthás.

† Sometimes called SINUR.

Many remains of stone-built tanks are also found here ; and various figures of Buddha are strewn about, or half buried. From the number of mounds which exist on the western side of the town, I think that digging might bring to light many other remains. On the whole, I would say, that Shinar must have been a great town in ancient times."

"In many other parts of the Godávari valley," continues Dr. Gibson, "are remains similar in feature to the temples now described. I may mention of those I have seen, a temple at MÍ'RI' below the DÍWAR Ghát on the road from Ahmadnagar to Paithan and another at GOTAN farther on the same road. There is a curious and highly wrought tank on the road to Paithan, and a similar one at Bamíní and a third near Kopergáum." Dr. G. is of opinion that there are the remains of an ancient Buddhist temple at NA'SIK of the same age as the caves in its vicinity.

A valuable temple inscription found near NA'GPUR by Major Wilkinson, supposed to be of A. D. 657, is translated by Dr. Stevenson in the fourth number of our Journal. It testifies to the existence of Buddhism in Central India at that period.

The celebrated temple of Víthoba near PANDHARPUR is supposed to be a Buddhist structural temple now appropriated by the Bráhmans. It certainly has the appearance of great antiquity. The oversight of the distinction of caste among the natives who frequent this shrine, when in the presence of the idol, would seem to indicate some compromise with the Buddhists. In the villages near Pandharpur, we have noticed other ancient temples probably Buddhist, which are entirely forsaken, and which bear the marks of violence, probably Brahmanical or Musalmán.

At BIJA'PUR, there are the remains of a Buddhist temple.

In CENTRAL INDIA, the Buddhist remains are numerous, as for example at Sanchí, and Airan in Bhopál, and Amaravatí in Berár. Some of these have been noticed in the Journal of the Asiatic Society of Bengal.

Captain Postans has given a minute and correct account of the temple of SOMNA'TH in the peninsula of Gujarát, captured, robbed, and injured by Mahmud of Ghazni, A. D. 1025-6, and called upon the writer of this brief memoir, who has examined that temple, to pronounce

a judgment on his (Capt. P.'s) impression, that "it was originally a Buddhist temple, afterwards appropriated to the worship of Shiva."* This judgment, with due deference but without hesitation, is given as adverse to this theory. The temple is entirely similar in its form, construction, and ornamental figures, to the older Shaiva temples in various parts both of the peninsular and continental Gujarát.

From a temple near PESHA'WAR, some figures, of workmanship resembling that of the Greeks, which are evidently Buddhist, have just been forwarded to our Society by Lieut. Miller of the Bombay Fusiliers. Among these figures is one like the Bacchus-looking figure noticed at Ankolá by Dr. Gibson.

Next in point of antiquity to the Buddhist temples of the class now mentioned, are the BRAHMANICAL TEMPLES, principally of the times of the Chálukya dynasty, having tablets with inscriptions in the *Hala Kanadí*, or ancient Canarese character. These tablets are possessed of great interest in a historical point of view. A large collection of them has been made and ably analysed and illustrated by Walter Elliot, Esq. of the Madras Civil Service, to whom all copies of others should be sent.

Colonel Tod, in his Rájásthán and in his Travels in Western India, has described many remarkable Bráhmanical temples in the provinces to which his researches extended. Many others of a similar character, remain to be noticed both in RA'JPUTA'NA' and GUJARA'T, and indeed in all the North-western provinces of India. The greatest desideratum is a copy of their inscriptions.

According to some Jaina authorities, JAINA TEMPLES were first built in the year 882 Virát, equivalent to A. D. 313. The most ancient of these temples we should naturally expect to find on the sacred mountains of the Jainas, esteemed by them their "eternal Tírtas." In none of them in these localities, however, do we see any with *dates* approaching this antiquity, or extending beyond the twelfth century.

The SHATRANJÍ MOUNT appears to have been known from olden times, for the river of the same name which has there its source is mentioned by Ptolemy under the designation of "Codrana" or "So-

* J. A. S. B. vol. vii. p. 868.

drana.”* Its base is about a mile and a half distant from the town of *Pālihanā* in *Kāthiāwād* ; and the ascent to its summits, on which, on varying levels, the temples are situated, is reckoned by the natives at about two leagues. It has been well described by Col. Tod in his *Travels in Western India* ; and some notices of it are contained in a *Journal*, by the writer of these notes, published in the *Oriental Christian Spectator* for 1835. Its traditions are collected in a *Mahātmya*, of which Colonel Tod seems to have procured a copy, and which should be translated into English.† The groups of temples for which it is remarkable, are perhaps the most wonderful in India, when their extent and position are considered. Descriptions and delineations of them are certainly desiderata. It does not appear from their inscriptions that any of them are of any great antiquity. Three of them, transcribed and translated by Major LeGrand Jacob, Mr. Orlebar, and Bāḷa Gangādhara Shāstrī, are given in the second number of our *Journal*.

The mountain of GĪRNA'R, near JUNA'GA'p in the same province, we first visited on the 13th March 1835. The following is an extract from the memoranda written by us on that occasion. “ After leaving the Nawāb's palace I rested for a little, and then proceeded in a *doli* to the celebrated Gīrnār hill. I found myself at the base of it (the road leads through thick jungle) about day-break. The ascent is very difficult, and, in some places from the precipitousness of the mountain, rather trying to the nerves. The rock is of granite, containing, particularly near the summit, a large quantity of hornblende. There is scarcely any vegetation upon it, and, indeed from its steepness, no possibility of the formation of a soil. The greatest temples are at an elevation, I should think, of about 3000 feet, estimating the greatest height at 3500. They are built of the granite, though some of the steps and staircases are formed of sandstone from the plain below. They are works of prodigious labour, and are executed in excellent taste. They are at present appropriated by the JAINAS ; but the most ancient of them ap-

* Ptol. Geo. lib. vii.

† This *Mahātmya* according to a date which it bears, and given by Colonel Tod, (*Travels* p. 276) was composed A. D. 421. It thus claims a greater antiquity than the favourite Jaina authority the *Kalpa Sūtra*, translated by Dr. Stevenson, which professes (p. 96.) to have been written A. D. 454.

pear to me, from a kind of *Dahgob* and other arrangements, to be undoubtedly BUDDHIST. The most remarkable Jaina images in them are those of *Neminátha*, not much exceeding the size of a man, black and ornamented with gold, and at present worshipped; and *Rishabhdeva* of a colossal size, of granite covered with chunam; and *Párasanátha*. In the inferior parts are the images of all the twenty-four *Tīrthankars*. There are numerous cells in the courts of the temples, and places adjoining, which were formerly used by the priests. At present the only persons who live on the hill, are the *śipáhís* who guard the temples, a few *pujáris* (beadles), and pilgrims who come to worship. I was allowed to go through all the temples and even to enter the shrines, and measure the idols. . . . The temple situated on the summit of the hill, though good-looking in the exterior, and evidently of Buddhist or Jaina origin, is very filthy within. In one extremity of it, there is an uncarved block of granite, with huge eyes and a monstrous mouth depicted upon it, sacred to *Devī* under the name of *Ambáná*. . . . The view from Girnár is one which is not dearly purchased at the expense of ascending it. It embraces the adjoining hills (of granite) and one of which, the *Dhátar*, vies with it in height, and an immense range of low country extending in all directions, and towards the west reaching to the sea." Other details of this mount and its temples, with their inscriptions, are given by Colonel Tod in his *Travels*, and by Captain Postans, in his Paper published in the *Journal of the Bengal Asiatic Society* for 1838. One of the temple inscriptions is given in the fourth number of our own *Journal*.

MOUNT ABU' or ARBUDHA, between Gujarát and Rajputáná, and its JAINA and HINDU temples, though treated of by Colonel Tod in his *Travels* in a very interesting manner, have scarcely yet been adequately described. If the temples of Shatrunjí excel them for extent, and those of Girnár for their substantial and durable material, these Abú Temples, we venture to say from personal inspection, excel all the Temples in Western India for their interior beauty, particularly in their curiously designed and exquisitely carved roofs and pillars. Most of their inscriptions have been translated by professor H. H. Wilson in the *Transactions of the Bengal Asiatic Society*.*

* Transact. of As. Soc. of Beng. vol. xvi. p. 284.

Various temples in the vicinity of Abú, as those of CHANDRAVATI and KUBADIA, well deserve notice.

The more remarkable shrines resorted to by the cultivators of the DAKHAN, though they have no intrinsic interest, are memorials of religious changes and developements which should not be altogether overlooked.

A general collection of temple inscriptions may furnish some valuable historical data, in a country whose records have only very partially escaped destruction, and have become greatly corrupted.

ROCK-IMAGES.

In connexion with the ancient excavated and structural temples, we may refer to the gigantic ROCK-IMAGES which are to be found in some places of India and the contiguous countries, as at BA'MIA'N in Afghanistan, at GWALIOR, and at KUSHIA' near Gorakpur.

A remarkable image of this character has been lately discovered by Mr. Impey of the Bombay Medical Service. It is cut in relief, is nearly eighty feet in height, and is situated on a spur of the *Satpudá* range, in the district of BHARWA'NI', on the Nabadá, about a hundred miles from Indur. A full account of it, embracing a comparison of it with other gigantic Buddhist and Jaina colossal images, is given by Mr. Impey, in a valuable paper lately communicated by him to our Society, and also, through the government of India, to the Bengal Asiatic Society, in whose Journal, for September 1849, it appears at length. This image, from its supposed height is denominated by the natives *Báwangaj*, or the image of "fifty-two yards." Some temples and niches, and statues with inscriptions are associated with it, to all of which ample justice is done by Mr. Impey in his interesting communication, to which the reader is referred.

The following is the abstract of Dr. Impey's paper, kindly prepared by himself, recorded in the Society's minutes.

"The Author states the figure to be nearly 100 feet high. It is with one exception the largest known, and certainly the one of greatest dimensions in India. The only others that have been noticed are of much smaller size, in the fort of Gwalior, and one near Gorakpur, the height of which is not given, but according to Mr. Prinsep it is

decidedly a figure of Buddha. At Beligula there is a *statue* of Gomal Givara upwards of 70 feet high, but the distinguishing peculiarity of the Bāwangaj figure is that it is essentially a rock image, cut in high relief out of the side of a hill, like the Bhuts of Bāmiān described best by Sir Alexander Burnes.

“The name Bāwangaj which has been given to this figure is derived from its supposed height of 52 gaj; but this is much exaggerated. It is, in reality, 72 ft. 8 inches to a little below the knee, and as the body from the pubes to the vertex is 45 ft. 5 inches, the whole ought according to sculptural proportions to be at least 90 ft. 10 inches, but its lower extremities are hidden by the debris which have fallen from the image itself and from the hill.

“It is situated in the district of Bharwānī (usually considered in Nimār) and on a spur of the Sātpuḍā rang which runs close to the town of that name. The hill above it is surmounted by the temple of modern *re-construction*; but it is surrounded by a wall in which are 37 recesses still remaining, containing figures of the Jaina Tīrthankars, the majority being those of Mahāvīra, the last deified Saint, whose Apotheosis [they maintain] took place 569, B. C.

“The whole ascent of the hill bears evidences of the Jaina persuasion, images of Pārasanātha and others lying about everywhere and neglected, opposite the Colossus. Several are very handsomely carved and sculptured, and apparently subordinate to the great deity, the worship of which is neglected. It is in a niche by itself, perfectly naked, with no ornaments on or about it, and is of the Digambar sect, which is very prevalent and numerous in central India.

The temple is situated on the very summit of the hill upwards of 2,000 feet above the level of the sea, and its present appearance is quite modern. Inside are 20 images, some erect, some seated, but the chief object of worship is the Pādaka or impressions of feet, a favorite characteristic of Mahāvīra. Of these impressions there are four, two large and two small.

“In rear of the large temple there is a small *Chāvadī* also containing figures of the Jaina Tīrthankars, and one of their Sumatī Tīrthan-kāress, or else of Bhawānī.

“All these would tend to the inference that the Temple and Colos-

sus were dedicated to Mahāvīra ; but if the latter were his, it would not be likely to be deserted, especially if his worship continued to be performed in the temple. Rishaba the first Tirthankar, is the only other Dīgambar Siddha, and there are many reasons for supposing the image to have been cut to his honor; but Dr. Impey thinks it is not quite clear which of the two is the presiding deity. The figures should be dug round at their feet, for it is there the chief events of the Deva's lives are represented.

"Inscriptions were found on the temple walls, and at each point of the compass, and one over the door with comparatively modern dates, S. 1,223 and S. 1,516. They are all written in the Baḷbodha character, and the oldest state the temple to have been built by Ramchandra Muni, A. D. 1,166 and the Sovereign's name is appended, —Vāyā Raja,—but unfortunately no such king can be traced at that period.

"The most important inscription met with at Bāwangaj, Dr. Impey states, was one which he picked up, engraved on a foot of Pārasanātha, (which accompanied his communication), which was lying in a heap of broken statues. Though comprising only three lines, it is very important as implying a much older and more ancient form of language than that in which the inscriptions on the temple are written. It is in Pālī and difficult to read from its peculiarities, but through the kindness of Dr. Wilson the author had obtained its decipherment. Almost the whole sentence is in the Pālī form of the Sanskrit, and one letter, the *ha* in the second line, seems to be conformable with the Gujārāt character of the second century.

"Dr. Impey concluded his paper with the description of a route for strangers to visit Bāwangaj without having to depend upon local enquiries. The best way is stated to be by Akbarpur on the Narbadā, from which travellers can drop down the river at all seasons to Chikaldā in about twelve hours, and Bāwangaj is not quite eight miles from the bungalow of that place. Another route is from Mhaw and Indur *via* Dhār and Bhopāwar. This takes in the Caves of Bhāg and has that advantage, but the other is much the easier and better road."

ROCK-INSRIPTIONS.

Of far more importance than the "rock-images" now mentioned are the ROCK-INSRIPTIONS to be found in some parts of India. The most remarkable series of this character which has yet been discovered, is within the immediate sphere of the research of our Society, that of the celebrated GIRNĀR ROCK near *Junágad*.

It is proper to give a few explanations of what has already been done for the illustration of its remarkable inscriptions, the "graving of an iron pen," which may probably "last for ever."

When in the province of *Kāthiāwād* in 1835, we heard of the visit of Colonel Tod to the remarkable antiquities near *Junágad*, his *Travels*, in Western India not having been then published; and we determined to regulate our movements so as to give us an opportunity of inspecting them. From the notes of our ascent of *Girnār*, on the 13th March, we have already inserted an extract. Our dealings with the rock-inscriptions are thus noticed in a communication to Mr. James Prinsep, published by him in the Asiatic Society's Journal for April 1838.

"I made as quick a descent of the mountain as possible, that I might reach, before the darkness of night settled upon me, the block of granite near *Junágad*, which contains the ancient inscriptions which, though never deciphered, have attracted much attention. I was able to accomplish the object which I had in view. After examining the block for a little, and comparing the letters with several ancient Sanskrita alphabets in my possession, I found myself able, to my great joy, and that of the Brāhmans who were with me, to make out several words, and to decide as to the probable possibility of making out the whole. The taking a copy of the inscriptions, I found from their extent, to be a hopeless task; but as Captain Lang (of the *Kāthiāwād* Political Agency), had kindly promised to procure a transcript of the whole for me, I did not regret the circumstance...."

"I suggested to Captain Lang, a plan for taking a fac-simile of the inscriptions. I recommended him to cover the rock with native paper slightly moistened, and to trace with ink the depressions corresponding with the forms of the letters. The idea of using *cloth*, instead of

paper was entirely his own ; and to that able officer, and his native assistants, are we indebted for the very correct fac-simile, which he presented to me, and which I forwarded to you some months ago for your inspection and use. During the time that it was in Bombay, it was mostly with Mr. Wathen, who got prepared for yourself, the reduced transcript, and with a native, who at the request of our Asiatic Society, and with my permission, prepared a copy for M. Jacquet of Paris.* I had commenced the deciphering of it, when you kindly communicated to me the discovery of your alphabet ; and I at once determined that you, as was most justly due, should have the undivided honour of first promulgating its mysteries. Any little progress which I had made in the attempt to forge a key, was from the assistance which I had received from the alphabets formerly published in your transcendantly able work, Mr. Elliot's Canarese alphabets, and the rigid deductions of VISHNU SHA'STRI', my quondam pandit, to whom Mr. Wathen has expressed his obligations in his paper on some ancient copper-plate grants lately sent by him to England. VISHNU's palæographical studies, I may mention, commenced with Dr. Babington's paper, which I showed to him some years ago ; and they were matured under Mr. WATHEN. I mention these facts from my desire to act according to the maxim, *suum cuique tribue*.

"The rock containing the inscriptions, it should be observed, is about half a mile to the eastward of [the present town of] *Junágad*, and about four miles from the base of *Girnár*, which is in the same direction. It marks, I should think, the extremity of the *Maryádá* of the sacred mountain. The Jainas, as the successors of the Baudddhas, greatly honor it. They maintain *pinjarápurs*, or brute hospitals, like the Banyás of Surat, in many of the towns both of the peninsula and province of *Gujarát* ; and practice to a great extent the *philopsychy* of the long forgotten, but now restored, edicts of ASOKA."

The fac-simile of the inscriptions executed under the directions of Major Lang here referred to, reached us in 1836. It was executed with the greatest care and neatness ; and, as mentioned in the extract now given, we lost no time in forwarding it to Mr. James Prinsep.

* Recommended to the notice of the Bombay Branch of the Royal Asiatic Society, by the learned Professor E. Burnouf, of Paris.

Before its reception, however, he had published in his Magazine, the inscriptions as taken from the hasty transcript made from it with our permission by a Bráhma in the service of Mr. Wathen; and though, they were thus given generally in a correct form, several errors appeared, which have been partly corrected from a second facsimile made by the late Captain Postans at the request of the Indian Government, and from transcripts and revisions very carefully made by Mr. Westergaard and Major LeGrand Jacob. Mr. Prinsep's translations have brought to light the most important discoveries which have perhaps been yet made in Indian archæology and history; but it must be admitted, that though they constitute an era in the study of Indian antiquities, they are,—like most translations of inscriptions in the cave character, very much of a tentative character,—and formed without any very definite grammatical analysis, or even apprehension of the strict meaning of the vocables which are used. In these circumstances, it is matter of congratulation among Indian orientalists, that professor H. H. Wilson has lately undertaken to form a new text of the inscriptions by a collation of the admirable fac-similes which have been made, and the notes of Mr. Westergaard and Major Jacob, and to execute a new or revised translation, with suitable philological expositions. These inscriptions are the more important that they agree in many respects with those discovered near *Dhaulí* in Katak by Lieut. Kittoe,* and at *Kapur di Giri* in Afghanistan, by Mr. Masson. The key to the last mentioned inscriptions, which are in a species of *Arian* character, reading from right to left, was discovered by Mr. Norris, of the Royal Asiatic Society, an orientalist of the most extensive attainments, and the ready and successful assistant of all British inquirers.†

—Since the preceding paragraphs were penned, we have received the first part of the twelfth volume of the Royal Asiatic Society, containing the revised text of the oldest Gírnár inscriptions,—those on the eastern side of the rock,—and Professor Wilson's most able and interesting paper "On the Rock Inscriptions of Kapur di Giri, Dhaulí, and

* See Journal of the Asiatic Society of Bengal, March 1838.

† For Mr. Norris's paper and a most interesting comment upon it, see Journal of the Royal Asiatic Society, vol. viii. p. 303.

Girnár." The learned director of the Asiatic Society acknowledges the labour and care which have been bestowed on the Girnár inscriptions; and he observes that "Dhauri and Kapur di Giri have not yet been examined under equal advantages." Speaking of the three inscriptions generally, however, he says, "possibly they still require to be re-examined and transcribed." In this statement, even with reference to Girnár, we are disposed to acquiesce, for a partial re-inspection by us of the rock there a few months ago, gives a few variants from the lithographed text which should not be overlooked. Now, when the character of the inscriptions is so well known, and the general import of the text is so well understood from the professor's modestly designated "proposed translation," errors, where they may exist, can easily be discovered by the orientalist.

Professor Wilson does ample justice in his paper to the ingenious and wonderfully successful labours of Mr. Prinsep. His translation, however, is far more precise and exact than that executed in Calcutta. His concluding observations merit particular attention.

He considers the language of the inscriptions to be "Pali, not yet perfected in its grammatical structure, and deviating in no important respect from Sanskrit;" and he observes that since the oldest books of the Buddhists are shown by Mr. Hodgson and M. Burnouf to be in Sanskrit, "it is by no means established, that Pali was the sacred language of the Buddhists at the period of the inscriptions, and its use constitutes no conclusive proof of their Buddhist origin." It is to be remembered, on the other hand, that the Páli of the Rock-Inscriptions is exactly the same as that of the oldest Cave-Temples, which are undoubtedly Buddhist, and that all the oldest *known* Bráhmānical inscriptions are in Sanskrit. The Buddhists, at least in the north of India, seem to have distinguished themselves from the Bráhmāns in the use of a popular language for their public and permanent proclamations addressed to the community.* We agree with

* In connexion with this fact, we may advert to the following passage from that most important and learned work, *L'histoire du Buddhism Indien, par E. Burnouf*. "The difference (of the Buddhist instruction from that of the Bráhmāns) especially appears in the preaching, the effect of which was to bring home to the understanding all the truths which were previously the property of the privileged classes. It

professor Wilson in thinking that the language actually selected was that spoken where the sovereign whose edicts are recorded resided, or perhaps that of the head-quarters of Buddhism. It is cognate with the present Gujarátí and Maráthí; but it is probable that the Turanian family of languages now confined to the South of India, and developed in the Canarese, Telugu, Tamil, Tulu, and Malayálam, had its remains among a portion of the inhabitants of the provinces of both Gujarát and Maháráshtra, at the time when the inscriptions were engraved. Though most of the names of places in these districts mentioned by Ptolemy belong to the Arian Languages, a few relics of the other family are traceable in them, as in "*Tiauspa*," "*Nusaripa*,"† the present Nausári between Daman and Surat,—and others of a similar kind. The mountain and forest tribes still use a few Turanian words; but they seem to have long stood aloof both from Bráhmaism, and Buddhism, its speculative reform.

Professor Wilson does not think that there is anything in the injunctions promulgated, or sentiments expressed in the inscriptions, that is "decidedly and exclusively characteristic of Buddhism." The moral and social duties to which they refer are common to Bráhmans and Buddhists. Tenderness to life is inculcated by the Bráhmanical Manu, and Mahábhárata, and subsequent works, as well as by the Buddhist writings. This must be admitted. The only presumption in favour of the Buddhists, founded on this characteristic of the rock-inscriptions, arises from the fact that the Buddhist and Jainas take the precedence, and are far more ostentatious, in their tenderness to life than the Bráhmans. The first lesson of the Játis, or Jaina priests, even at present, when they seek to gain converts to their system at the base of the Gírnár mountain, as we have heard it from their own lips, is "Observe *daya*, or mercy, ours is the *dayá-dharma*, the religion of mercy," the most common designation of Buddhism on the cave inscriptions. The Gírnár inscriptions inculcate reverence for Bráhmans; but they couple Bráhmans with Sramanas, generally under-

(the preaching) gives Buddhism a character of simplicity, and under a literary view, of mediocrity, which distinguishes it from the very profound manner of the Bráhmans."—Dr. Roer's Review, J. B. A. S., 1845, p. 800.

* Ptol. Geog. lib. vii.

stood to be Buddhist devotees, and probably use both words, in a spirit of tolerance, more in a generic than a specific sense. Though Buddhism opposed from the beginning the exclusive pretensions of the Bráhma caste, existing when it originated, and then seeking to extend its privileges, it admitted the superiority of the two higher classes of the Hindus, the Bráhma and Kshatriya ; and they appear at first to have favoured the mission of Buddha.*

Professor Wilson lays considerable stress on the fact that the rock inscriptions of Girnár, Dhauli, and Katak have no allusion to Buddha himself by any of his appellations, Sugata, Tathágata, Gautama, Sákya, or Sákyaśinha, to his family, or to any of his early disciples, or to any of the Bodhisatwas, and to the other fact that no hint occurs in them of Stupas, Vihárs, or Chaityas, or of the Bodhi, or Bo tree,—everywhere else so frequently adverted to. These omissions certainly would be puzzling in the view of the theory of the claims of the Buddhists to the inscriptions, were the engravings mere solitary remains in the localities in which they are found. They are merely portions, however, of unequivocal Buddhist establishments. The oldest temples on Girnár we took to be Buddhist, when we first inspected them, as will be seen from the quotation from our notes which we have already introduced. A Buddhist *Vihár* we lately found a few hundred yards from the graven rock, an inscription of which as given by Col. Tod in his *Travels*, is in the same form of character as we find in the oldest of the rock tablets.† The Dhauli rock, too, is associated with a *Vihár*, drawings of which by Captain Kittoe are published in Mr. Prinsep's *Journal*, and the Kapur di Giri inscription is in a Buddhist locality.

The facts connected with the tenor of the inscriptions which are noticed by Professor Wilson, are most worthy of attention ; but, while they may be a check to rash conclusions, they have not made us sceptical respecting the Buddhist character of the rock inscriptions.

The proclamations on the rock inscriptions run in the name of *Dewánám piya Piyadasi Rájá* and they contain allusions to the terri-

* Burnouf, *Histoire du Buddhism Indien*, p. 140. M. Bournouf's remark is founded on the Sûtras, which he carefully analyses.

† See above p. 76.

stories of *Antiyako*, *Turamāya*, *Magá*, *Alikasunari*, and *Antikoná*. The occurrence of the latter names fixes a limit to their age. They are obviously not of synchronous kings. "We must look, therefore," says professor Wilson, "not to dates but to notoriety of the names, and the probability of their having become known in India, for the identification of the persons intended. Under this view, I should refer Alexander to Alexander the Great, Antigonus to his successor, Magas to the son-in-law of Ptolemy Philadelphus, Ptolemy to either or all of the four princes of Egypt, and Antiochus to the only one of the number, who we know from classical record, did visit India, and who from the purport of the inscriptions we may infer was known there personally,—Antiochus the Great. In this case we obtain for the date of the inscriptions some period subsequent to B. C. 205." *Piadasiná* has been identified by a single Buddhist work of the fourth century after Christ,—the *Dipawanso* not free from chronological errors,—as Ashoka, the grandson of Chandragupta, the Sandracoptos or Sandrocottos of the Greeks, the ally of Seleucus Nicator, B. C. 305, and in this identification, Mr. Turnour, Mr. Prinsep and others have acquiesced; but, as remarked by professor Wilson, it seems very unlikely that Ashoka could be living a century later, or that, in his inscriptions, he would substitute a titular appellation for his proper name. That there are anachronisms in the tablets, is obvious from the allusions to the Greek kings who were not contemporaries; and if the tablets were engraved by the alleged authority of a deceased king, it could only be through such a pious fraud as the Buddhists,—though the fathers of Indian history in its proper sense,—have sometimes been guilty of, to give currency to their doctrines and precepts. *Devánán piya Piadasina*, we venture to take to be the *Devananpiatisso* alluded to in the passage which we have already quoted from the *Mahavanso*, and who seems to have been a great propagator of the Buddhist faith.* This prince was, during part of his reign at least, the contemporary of Ashoka; and though the chronological difficulty is thus not altogether removed—which in the disposition of the Buddhists to antedate when occasion required seems insuperable,—the nominal

* See above, pp. 81-82.

difficulty seems to us to be much lessened, while the historical fact of the effort to extend Buddhism is recognized, though with a perverted date. The Chinese traveller Fa Hian (A. D. 399-414), and those who followed him, whose works have been so well illustrated by Remusat, Klaproth, Landresse, and Burnouf, and analysed by Colonel Sykes, attribute most of the Buddhists Vihārs and structures, which they observed in their extensive journeys in India, to Asoko. It is probable that for this ascription, they had some historical foundations.*

Mr. Prinsep's translation of the western tablets of the Gīrnār rock of a posterior age remains yet to be revised.

SITES OF ANCIENT TOWNS.

It is much to be desired that the researches of the Commission to be appointed by Government should be directed to the inspection of the SITES OF ANCIENT TOWNS in all parts of the country, and to the vigorous prosecution of research connected with their RUINS and RELICS, their WELLS and TANKS, and even the TRACES OF THEIR FOUNDATIONS. Their larger remains require a regular survey, under European superintendence. Directions should be given to the native authorities in their neighbourhood to preserve all the COINS and COPPER PLATE GRANTS, and SLABS BEARING INSCRIPTIONS, and ancient FIGURES which may be found at them. Of what may be done in this way, even in an incidental manner when other resources are not forthcoming, we have a good example in the success of Dr. Alexander Burn, in procuring at Khedā (Kaira), by a slight encouragement of the natives, about fourteen pounds weight of coins of the SAURĀSTHRA dynasty,—now so thoroughly illustrated, after Mr. Prinsep, by Mr. Edward Thomas of the Bengal Civil Service,†—and four valuable sets of COPPER-PLATE CHARTERS of the same race.‡

The history of all the various tribes in the wide extent of India may

* See Notes of Colonel Sykes on the Religious, Moral, and Political state of India before the Mahomedan invasion.

† Journ. of the Roy. As. Soc. vol. xii. pp. 1-72.

‡ Journ. of As. Soc. of Bengal, vol. vii. pp. 908-814; 966-978.

be illustrated in the manner now alluded to, and that to the great advantage of both rulers and ruled in this country; for certainly the more that is known of its past history, the better will its present state be understood. Speaking of the ABORIGINES, or mountain and forest tribes, Colonel Tod justly says, "There are many ancient SITES OF FORTRESSES and CITIES appertaining to this race, which are well worthy of being explored."* He might have added BURYING-GROUNDS, for some of those connected with even the oldest TURANIAN tribes can still be identified, and with their contents are very curious, as those described under the name of the PANDU KOLS of MALABAR in our own Transactions, and those lately discovered near Kalbargah by Captain Meadows Taylor, and an account of which will soon be published in our Journal. There are scores of ancient CAPITALS and principal towns of the HINDU princes of various dynasties, and some of which are mentioned in remote times, which have not met with a tithe of the attention to which they are entitled. Colonel Tod's notices of those in *Rajputáná* are the fullest, and in the highest degree creditable to his observation and research; but they, nevertheless, with the progress which has been made in late years in the study of Indian antiquities, may be both much extended and made more precise. Many places, in the south of *Rajputáná*, and the north and west of *Gujarát*, including the Peninsula, he saw only during a hasty journey; and nothing has been systematically done since his day to follow up the inquiries which he originated. *Chandraváti*, *Anhalwád-á-Pattan*, *Wala* or *Walabhi*, *Sihor*, *Bháwanagar*, *Pálitáná*, *Junágad*, *Pattan-Somnátha*, *Káthi-Kot*, and other places of like celebrity, have still their claims on the antiquarian.† The same remark is applicable to *Ujjayana*, and many other places in central India, and *Devagiri*, *Kalyánpur*, *Vijayanagar*, and other towns in the Dakhan. Even the MUHAMMADAN capitals should not be neglected, as is evident from the example of the interesting papers on Bijápur by Colonel Sykes and Mr. Bird, and the

* Tod's Travels in Western India, p. 173.

† Of Gumlí, the ancient capital of the Jaitwa tribe in Kátháwád, an account has been published by Major LeGrand Jacob. The notes of Captain Postans on Pattan Somnátha have also been published since Major Tod's visit.

curious and interesting information collected by Mr. G. H. Briggs in his late meritorious work.*

Of the importance of a vigorous prosecution of research in connexion with the Antiquities of India, it is difficult to form too high an estimate. A different kind of credit is to be obtained by those who devote their limited leisure, and their incidental attention when travelling throughout the country on their lawful occupations, as auxiliary to this work, than those receive who collect and pile curiosities upon one another without the slightest regard to their historical import, and who devote themselves to mere conjectures about their meaning, as if their own ingenuity would compensate for the want of attention and study,—who simply gather

Intaglios rude, old pottery, and store
Of mutilated gods of stone, and scraps
Of barbarous epitaphs, to be
Among the learned the theme of warm debate,
And infinite conjecture sagely wrong.

Historical truth is to be found in India, in a state of comparative purity, only in the ancient monuments of the country ;—the temples and habitations excavated from the living rock, or erected with wondrous labour, with the varied and multifarious objects of interest which they enshrine ; the pillars and mounds of victory and religious commemoration ; the impressions of the iron pen, which, in the days of yore, with imperial or sacerdotal commission, recorded irrevocable decrees or pompous proclamations on the plate of metal, or durable stone ; and the images and superscriptions remaining on the tokens of value and of credit, which were formerly current among the people. These monuments, of an unequivocal character, have best withstood the ravages of time the great destroyer ; and religious fraud, repelled by their venerable antiquity or exhausted in the attempt to entomb their magnitude, or to annihilate their multitude, or to efface their permanent records, has failed to destroy them or effect their corruption. They have survived the destruction of their keepers, effected by the Bráhma and

* Cities of Gujaráshtra, Bombay, 1849.—The account of Mandu by the late Lieut. Blake, published at the press of the Bombay Times, may be referred to also under this head.

Rajput and Maráthá chief; and they tell their own tale in spite of their appropriation by sects and parties which had nothing to do with their origin, and many of which have come into existence subsequent to their execution and completion. They have proved too solid for the sledge hammer of the Musalmán entirely to mutilate them; and too incumbustible for the fires of the Lusitanian to consume or rend them in pieces.* They still exist for comparison with the ancient literary remains of India, confirming what little of historical truth is to be found in these records, and illustrating their erroneous, though sublimated speculations, and their wild though unpoetical mythology, with all its perversions and exaggerations. They are the credentials of the genius, taste, wealth, and power of ancient India. The interpretation and exposition of them by the European orientalist to the simple natives who have access to them, has destroyed their belief in their divine origin, and deprived the systems of living error around them of that veneration associated with them when they were believed to be the undoubted property of these systems, and the veritable works of the very gods who are now worshipped; and it has taught some of the learned natives the principles of historical investigation. They testify to all of transactions and changes, both civil and religious, which have occurred in ages long gone by among a people too long supposed to be immoveable in their creeds and customs, and to preserve an attitude of sublime or stupid repose, and which strengthen the conviction that the obstacles to the important changes which Christian philanthropy leads us to desiderate and solemn duty and delightful privilege lead us to attempt, are in reality much less formidable than they appear to be to the view of the timid and inconsiderate. The few individuals comparatively who have directed their literary attention to them, have received, in their recognition of these facts, a rich reward for what they have done *in their elucidation. Our Asiatic Societies observe the highest ends of their incorporation, when their members combine for the prosecution of the work

* The natives have a tradition, that the Portuguese kindled fires of straw round some of the images at Elephanta, and then split their lower parts by throwing water upon them when they were heated.

of their more extended investigation. The Government of India pursues an economical, as well as a liberal and enlightened, policy, when it determines to adopt decided measures for their conservation and complete or general delineation.

Bombay, 23rd August, 1850.

POSTSCRIPT.—It will be seen that this paper, brief though it be in many of its intimations, brings a considerable number of important Antiquities to light, which have hitherto been entirely overlooked by Europeans. It has been confidently stated, that many such objects of interest yet remain to be discovered in this country.

Since the sheets on the ROCK-TEMPLES were printed off, the writer of this Memoir has heard of several series of ancient works of the same character, of the existence or nature of which he has been hitherto ignorant.

Three of them are brought to notice in the following note from that indefatigable observer Dr. Gibson, to whom this paper is already so much indebted.

Dhápuri, 12th July, 1850.

MY DEAR DR. WILSON,

The Cave of which I spoke to you (at the foot of the Ghát) is at a village called A'MBOLI' near to *Jámbrúg* and *Washá*, below the southern shoulder of the *Bhimá-Shankar* hill. There is there one large apartment having the usual pillared veranda. The pillars, etc. are in excellent order, and have a few letters of inscription in the usual cave character. The main chamber contains five or six recesses or closets; and in each of them is an image or a group of images. But I think that these are much more modern than the cave itself, with one exception. I will send you drawings of the whole after I reach Hiwará i. e., after the 20th instant. The cave is beautifully situated on the face of a low hill overhanging the river. The cave has an easterly exposure.

I do not know that I ever mentioned to you the series of caves at BORGRI', a village three miles east of *Bhimá-Shankar* on the Dakhan

side. They are situated in the scarp of an isolated hill. They contain a double series of the pillars common in such caves; but I could discern neither ornament, images, nor inscriptions.

Also, at a village situated five miles W. S. W. from A'YARA' in the Táluká of Khed (Kheir) I have observed, from a distance, a scarp having a northerly exposure and containing apparently several caves, similar in size to those in the hill immediately south of Junír.

Yours sincerely, ALEX. GIBSON.

These caves are all in a locality to which we have already pointed, as probably having many remains of this character.* Those at AMBOL' seem to be a small Buddhist *Vihára* or *Dharmashálá*, of the latest type, at present appropriated by the Bráhmans, who, judging from the drawings forwarded to us by Dr. Gibson, have placed within them a small collection of miscellaneous images :—of *Ráma*, *Lakshman*, and *Sítá*, *Lakshmi-Náráyana* (two examples, in one of which the god and goddess are mounted on *Garúḍa*,) *Náráyana*, *Ranchodjé* (the form of Krishna worshipped at Dwáraká), *Bálájí*, *Bhimá-Shankara*, and *Krishna* playing on the lute. These images seem to be the spoils of some destroyed temples.

Another series is in BELUCHISTA'N and is thus noticed by Dr. Stocks, lately returned from a botanical excursion in that interesting province, which has hitherto been but little explored.

Karáchí, July 5th, 1850.

DEAR SIR,—During my late visit to Beluchistán, it chanced that I came across the "Cave Temples" and the "Inscription graven on a rock," mentioned by Masson in his work on Beluchistán (vol. iv. p. 389) as occurring at Nichárá. The cave temple with its corpses on Charpáos, was but a hole in the side of a mountain containing from 25 to 30 *perfect mummies* with clothes, sheets, couches, ropes, etc. in an excellent state of preservation. But, in nearly every case, you could trace on the skeleton, from *sword cuts* and *bullet holes*, that the parties had died a violent death. They were certainly not the remains

* See above, p. 55.

of fakírs or ascetics. There was a pretty little mummy of a child, about two years old, amongst them. The natives called them the Shahíd, شهيد, and had a tradition that they were killed by Káfirs.—The Nichará inscription is a curious thing. It is on a rock which has a thin external vitreous rind of a whitish colour. This has been chipped out, so as to leave the inscription easily made out from the difference of colour between it and the body of the rock. But what it is I am perfectly at a loss to say. Hence I send it to you. I got no coins, nor did I see any other thing worthy of notice in my journey, plants of course excepted. I got to Queta, and Mustong, and ascended the giant mountain Chehel Tun, 11,000 feet above the sea, or 5,000 above the plain; on which snow was abundant on the 5th May. I remain,

Yours very sincerely, J. E. STOCKS.

The inscription forwarded to us by Dr. Stocks, consists of six letters. Though, from the injury of the stone, they are not very distinct, they appear to be of the Buddhist cave character. Five of them, we readily decipher. The one remaining seems to have sustained some injury. The Sanskrit restoration seems to be खग ऋषि नमः "GLORY TO KHAGA RISHI." A symbol near them is Buddhistical also. The mummies, of course, are of a later age. The character of these caves gives much interest to the discovery of Mr. Mañson and Dr. Stocks.*

At the GANESHA-KHIND, near Puná, there are a few chambers occupied by Bráhmanical images, which should have been alluded to under the heading of "THE CAVES OF PUNÁ."

* *Erratum.* For कराद, *Karád*, p. 59, read कराद, *Karádāh*.

ART. VII.—*Memorandum on some Buddhist Excavations near Karāḍh.* By H. B. E. Frere, Esq. Commissioner of Sātárá.

These caves are situated on the skirts of the Hill of A'GA'SHIVA, so named from a temple of Mahádeva at the top. It is the last of the range which, running off from the main Gháts near Helwak, forms the southern boundary of the valley of the Koiná, till that river unites with the Kríshná at Karāḍh. The hill itself rises about two miles from Karāḍh; and the temple at the top is about four miles from that town. From the temple two spurs run off in an easterly direction, one towards Karāḍh, the other towards the village of Jakanwádí. The annexed rough sketch of the hill will better explain the locality.*

Some of the caves are much scattered, but, for convenience of description, they may be grouped into three series, in the order in which we visited them.

1st. That which overlooks the valley of Jakanwádí. The caves generally face south, and are the furthest from Karāḍh. This is the largest and most important series.

2ndly. The caves in the valley between the two spurs above described. They are few and scattered.

3rdly. The caves overlooking the valley of the Koiná and Karāḍh. They face generally north.

The villagers of Jakanwádí said no Europeans had ever examined these caves till they were visited by Dr. Murray, Lieut. Lurie, and myself, on the 29th ultimo, and it appears to have been only of late years that the caves have been much known, even to the natives of the immediate neighbourhood. Formerly they were merely used as cattle-sheds by the owners of the fields in the valley below; and it is said to have been not more than about 10 years ago that a recluse devotee of Viṭhobá from Pandharpur, had one of the caves cleared out, and took up his residence there; others followed, and an image of Viṭhobá was set up in a niche cut out of one of the Dahgobs. There are now seven-

* In the deposit of the Society.

ral permanent residents including a Gosávi, who according to the statements of his disciples, "every fifteen days makes the journey to Pandharpur and back (about 90 miles) measuring his length on the ground, crossing unfordable rivers in the same position, and performing many other wonderful acts." Respectable well informed natives, who had seen him crossing the Krishná in the rains, acknowledged that his manner of doing so appeared to them very like a mode of swimming which they had seen others practice. Nevertheless, the belief in his powers is universal throughout the country round Karāḍh, and his residence bids fair to become, ere long, an established and favorite shrine of Viṭhobá.

The following list of caves commences at the western end of the first series, which may be called that of Jakanwádí. More minute search may probably lead to the discovery of many other excavations now covered by rubbish. They are generally excavated in a very soft variety of very vesicular amygdaloid, of a pinkish roan colour, unfavourable for cutting or retaining figures or letters. This may partly account for the generally unornamented character of the caves, and the rarity of inscriptions, of which we were not successful in finding any traces in the caves on this side of the hill.

I. No. 1, called, by nick-name, "Choká Melá," the "Mahár's" cave, the most western of the series at the top of the ascent from Jakanwádí. It is at present inhabited by two or three "Mahár Sants," who have lived here for the last six or eight years. The entrance is flanked by something like pilasters of a very simple form, an octagonal band dividing a square pilaster; but the mud and cowdung additions of the present occupants prevent much of them being seen (Vide ground plan).* About 20 paces east is,

No. 2. "Mandapchí Wádí," the Mandap, or Cutchery; a plain flat roofed large cave; the ground plan may obviate the necessity of a lengthened description.

No. 3, 40 paces further east, is a small apartment 17 feet by 6, with a single small cell at the back furnished with the usual bench or bed-place.

* In the Society's deposit.

A very few paces further east is.—

No. 4, “*Lakshmíchí Wádí*” Lakshmí’s cave, a small apartment 17 feet by 18, with 4 cells opening off it. The cell to the right as you enter has a small door communicating with a Dahgob cave; the ground plan may explain the arrangements of both.

No. 5. The 1st Dahgob cave, is known as “*Chandra Suryáchí Wádí*,” “the cave of the Sun and Moon.” It opens to the S. W. The space in front, about 16 feet wide by 25 deep, has been divided into two by two pillars, which formerly supported the roof of an antechamber, but the pillars are broken and the roof fallen in. There is a small tank to the right as you face the entrance; and beyond it, on the same side, is a small square recess with an arched niche within it. On the opposite side near the tank is a square niche with a hole at the bottom, as if for a drain; and further in, on the same side, the aperture before mentioned leading to the cell in No. 4. The door leading into the principal cave is square-headed, with marks of where a wooden door frame may have been; over it is a square window, and on either side of it a rude pilaster; that to the right (as you face it) surmounted by a figure of what the natives call a Lion, that on the left by a wheel-shaped figure, which they call the Sun. The annexed sketch may help the description.

The interior cave is about 30 feet by 12 and about 16 high. It has a covered semi-circular ceiling. At the further end is the Dahgob.—The umbrella part is cut out on the ceiling; but the shaft has been broken away. The present height from the floor to the top of the square below the umbrella shaft is about 11 feet, and the greatest circumference 25 feet. Vide annexed sketch.

About 10 paces east of this is No. 6 “*Vīṭhobáchí Wádí*,” Vīṭhoba’s cave, from the figure of Vīṭhobá, which was a few years ago set up in a niche cut in front of the Dahgob. The space in front, which has a small tank on each side, leads into what was formerly an open verandah supported by 4 pillars—the inter-columniations have of late years been built up. From this a door, with a large window on each side, leads to a cave about 15 feet square, beyond which, in a room about 19 feet by 11 feet, is a Dahgob, about 21 feet in circumference. In front of which Vīṭhobá’s image has been inserted. On each side

of the entrance is a kind of square pedestal ; and on either side of the antechamber are two smaller caves, each about 15 feet by 6, with a small closet, without any bench or bed-place leading out of each, as shown in the ground plan.

About 10 paces further on, is No. 7, a square cave 20 feet by 20, divided into two with 2 small cells at the back of the further compartment, and a recess at each end of each compartment.

A few paces further east is No. 8, a cave very similar to that just described, but with no cells at the back of the cave.

A few yards from this cave, across the bed of a torrent, the hill side tends more directly south than before, so as to make the entrances to the caves, on this side of the ravine, face nearly west.

The first cave No. 9, is about 19 ft. by 16, with 8 small cells leading from it, all much decayed.

No. 10, is a single small cell.

No. 11, is a small flat-roofed cave, only 22 ft. by 13½, and about 10 ft. high ; but it contains a small Dahgob, very much weather-worn, and only 11 ft. in its largest circumference. A slight outline sketch is annexed.

No. 12, is a small cave 17 ft. by 12, divided into two with a small cell at the back of the further compartment.

No. 13, is very similar, but only about 12 ft. square.

No. 14, is a single cell, and No. 15 like No. 13.

No. 16, is a Dahgob cave ; 2 pillars support a verandah, about 20 ft. by 4 with a bench on the right. Beyond this is an antechamber 20 ft. by 11, lighted by 2 windows, and beyond this a room about 15 ft. square, with a small Dahgob, about 23 ft. in circumference (vide ground plan).

No. 17 is a large square cave now nearly filled up with rubbish. It seems to have had only one small cell leading from it.

Across another Nalā, are Nos. 18 and 19, both single cells.

No. 20 is a large square cave about 34 ft. by 29. On each side, nearest the entrance, are large raised recesses. That to the right, as you enter, has one pillar supporting it in front, with indications of mortices, which may have been used for a wooden partition ; but as the Gosāvi before described had taken up his quarters there, we

could not examine it very closely. Beyond these recesses are 2 cells, on each side, and 4 at the further end of the cave, as shewn in the ground plan.

No. 21 is a small cave with 3 cells at the back. No. 22 is a single cell, and No. 23 a small cave with 4 cells.

Most of the benches in these caves have perforations at their edges, so as to form staples, as if for tying animals. Some of the floors have several small round holes, similar to those now used as mortars for husking rice. Most of the doors and several of the windows bear marks of mortices, as though they had been furnished with wooden lintels and door posts, or with window frames, which have been supplied by the present occupants to one or two of the cells which are inhabited.

The general size of the cells in this part of the hill, is 6 ft. by 6; but some are rather larger, the most spacious perhaps 8 ft. by 7. They are almost invariably furnished with either a bench, or recessed shelf at one end, as if for a bed place. Small tanks or reservoirs of water are abundantly scattered about—there being in general one or more near each cave. All the Dahgobs are cut out of the solid rock, from which the caves are excavated, and none of them appear to have been built, or to bear marks of any cavity in the interior, or in front, with the exception of that *recently* made for Vithobá in No. 6. The workmanship of the caves is everywhere very rough, apparently done with a round pointed pickaxe.

II. Leaving this series we ascended the hill, and just below the temple of Mahádeva, which is at the summit, we found ourselves at the head of the valley which lies between that of Jakanwáđi and the valley of the Koiná, and contains the 2nd series of caves.

The only cave in this ravine visited by the people of the neighbourhood, is known by the name of “Bahirobáchá Dará,” No 24. It is situated in the angle at the head of the valley, and very close to the foot of the hill. Scrambling down to it, we found a square Vihára cave, containing 4 cells, in which we observed the peculiarity that the windows (of which there was one to each cell opening into the large cave) were pierced in lattices of square holes. On the right hand side of the entrance as you enter, are sculptured in low relief, what

appeared to be the figures of Dahgobs each surmounted by the outline of the arched front of a cave.

This ornament was repeated, I think, three times on each side. Our examination of this cave was, however, very hasty and imperfect.

The floor has been *built* up with mud and stones, for what purpose we could not learn, but so high that it was impossible to enter except almost creeping. The middle of the cave is a pool of water, and water falls in great quantity from the roof. Added to this the evening was closing in, which rendered the darkness of the cave greater than usual, and obliged us to be quick in re-ascending, as we had a long walk over the hill, before we could reach the valley of the Koiná.

Close to this cave is one of the usual tanks, and in climbing the hill, on our return from it, we observed, in the face of the rock on the western side of the ravine, some openings evidently of caves. They were not frequented by the villagers, and were difficult of access. A path was afterwards cleared to them, but circumstances prevented our visiting them. The following account is from the notes of a Bráhmaṇ who was sent to examine them.

"No. 25—a cave 51 feet long by 27 wide, with 10 interior small cells. To the west is a small cave, but too much filled with rubbish to admit of its being measured.

"No. 26—a cave, too much filled with rubbish to be accurately measured, but apparently about 30 feet long by 18 wide.

"No. 27—a cave 24 feet long by 20 wide.

"No. 28—a cave 21 feet long by 18 wide supported by 2 pillars.

"No. 29—a small cave about 13 feet long by 7 wide. Above this are 2 small caves but too much filled up to admit of their being measured.

"No. 30—a cave 19 feet long by 6 wide. Above this are 4 caves, so much filled by rubbish, that it was impossible to measure them.

"No. 31—a cave of 5 divisions (khans) 22 feet long by 12 feet wide, with 2 interior cells each about 6 feet square.

"This last cave is about two miles from cave No. 24."

Thus far from the description of the Bráhmaṇ, which brings us to the end of that spur of the hill which overlooks Karádh, and to the third series of caves, or that in the Koiná valley.

III. It was almost dark when we reached them, after walking over

the hill from those already described (Nos. 1 and 24); but I was able to pay them a hurried visit a day or two afterwards.

They generally face to the northward. I began at

No. 39, which is close to the path leading over the hill to Agáshiva, and the most westerly of the first line of caves on this side of the hill.

It is a small square cave, with a single cell inside, on the right as you enter.

No. 38 is a little lower; and about 40 paces to the east, a single small cell.

A few paces further to the east, you come to the foot of a flight of 14 regular steps cut in the rock, with the remains of a low plain balustrade, the steps lead to No. 37, a cave or rather range of caves, which are over Nos. 36 and 38, (vide plan).

The annexed plan will explain their arrangement. At the top of the steps a narrow space is cleared, in front of the cave, with a small tank, close to the steps. The range is flanked by a cell. At each end 4 square pillars support a verandah $36\frac{1}{2}$ feet long by about $6\frac{1}{2}$ feet wide. A Dahgob cave is in the middle of the range, with 2 cells on each side.

The cells are smaller than usual, being rather less than 6 feet square, and contain no seats nor beds. There is a small square niche at the entrance of that which is on the western flank of the range.

The Dahgob cave is about 26 feet long by 11 wide with a flat ceiling, about 11 feet high at the further extremity and a little higher near the entrance. The Dahgob is 21 feet in circumference. The umbrella is sculptured on the ceiling; a cylindrical shaft connects it with the cube, which rest on the dome of the Dahgob. The faces of this cube have a latticed ornament round the top of the drum. Below the dome, runs a band of 3 horizontal bars, crossed, at short intervals, by single perpendicular bars. To the right of the Dahgob, and a little in front, are the remains of a group of figures, about 5 feet high. The top of the group is flattened; and there is a kind of recess in the wall of the cave, as though the group had served for a bracket to a slab. What was the intended action of the figures, which are very rudely executed, I could not conjecture, nor even at first clearly make out whether there were one or two. The villagers who were by,

said they represented a man who came to rob, and was there bound, hand and foot to a tree. The annexed sketches may give some idea of the Dahgob and the figures also. The large figure was distinct enough, and was apparently intended to represent a male figure, with a cap, terminating in 2 large bows or branches, on his head; ornaments in his ears; bangles round his arms; and a necklace round his neck; drapery round the loins, and upper part of the person; and something of a carved shape in the right hand.

The smaller figure had the appearance of the lower extremities of a man, ending above in a tree, or bunch of excrescences, the design of which I could not conjecture. The figures are indistinct, not so much from injury by time as from original rudeness of execution.

A small door only 3 feet by 2, leads from the left hand corner of the Dahgob cave near the entrance, into the cell next to it, on the east; and the cell beyond this communicates, by an irregular aperture, with the surface of the rock above.

In some of the caves there is a large vein of soft rock, through which water might find its way from above; grooves have been cut in the rock, parallel to the vein, apparently with a view to carry off the water. All the doors have mortices at the top, apparently intended for wooden door frames.

The cell which flanks round to the east, has a curious communication with the hill above. From the back of the cell on the right, a passage leads, first a few feet west, then, at right angles, a few feet south, where it communicates with a perpendicular shaft, about 12 feet deep from the surface, and about 4 feet by 3 in width.

A passage leads sloping up, out of this shaft, on the south side, and turning W. comes out on the hill, above the range of caves. This will be better understood from the plan.

Returning downwards, and descending the flight of steps, close to their foot, on the eastern side is

No. 36, the arrangement of which may be best explained by the ground plan of the last cave.

The principal cell has a bench, running the whole length on each side; at the back is the entrance to an inner cell, which is unfinished.

To the east is a small cell, communicating with the principal one

by a door cut behind the bench. There is also a similar communication between the principal cell and the antechamber, leading from the small cell direct to the outer air.

On the eastern wall of this antechamber, and on the backs of two niches which are recessed, one on each side of the entrance to the principal cell, are traces of inscriptions, the sole remains of the kind observed in these caves, (*vide a. a. in the plan*).

Owing to the coarse grain of the rock, the letters could never have been very finely cut, and are so much decayed that it required minute examination to be satisfied that they were really parts of an inscription. Annexed is the best fac-simile I could make of the very few characters which were distinct enough to enable me to copy them; probably a person acquainted with the character, and assisted by the strong side light of an evening sun, or a torch after night-fall, might make out a few more, and perhaps complete the two lines. The roughness of the rock hardly admits of taking an impression with ink on cloth.

Proceeding east and passing some remains of steps cut into and leading up the rock, you come to No. 35, a large cell with a verandah supported by two square pillars in front, and a small interior cell on the left hand side.

About 40 paces east is No. 34, a small room with two cells at the back.

A couple of paces east is No. 33 a single cell, and a few paces beyond it No. 32, a range of five small cells, two of them with bed-shelves, which, as already remarked, are generally wanting in the caves of this part of the hill.

Beyond this, at some distance east round the end of the spur, is No. 31, the last of the series already above described from the account of a Kárkun.

I had just completed my examination to this point, when a cultivator, whose fields were hard by, volunteered to show us some more caves which he said were little known to any except the cow-boys whose cattle grazed on the sides of the hill. He accordingly led us back to the western end of this series, and descending the hill obliquely in a N. W. direction, showed us Nos. 40, 41 and 42, three small cells, ap-

parently single, but too nearly filled up with rubbish to enable us to examine them.

Still proceeding N. W. about half a mile, he brought us to a large and wide ravine, on the eastern bank of which, near the foot of the hill, we found five caves, mostly choked with rubbish and brushwood, and evidently seldom visited except by jackals and bats, of which there were such numbers as to make a minute examination any thing but an agreeable task.

The caves here generally face nearly west.

No. 43—is a large square cave much filled up ; with ten interior cells opening from it, three on either side and 4 at the back. In front is an antecave or verandah, supported by 2 plain square pillars.

No. 44—consists of two single cells.

No. 45—is a cave, 36 feet long by 13 ft. 13 in. wide, with a coned or waggon vaulted ceiling, like those caves which contain Dahgobs, but this has none. To the left of it are two cells very much filled up, and two to the right as you enter.

No. 46—is a large cave, 36 feet long by 28 wide, and containing 18 cells opening off from it. Their partitions are much broken, and the cells much filled up. One of those, on the left hand side, is of larger dimensions than the rest.

No. 47—is a cave, about 20 feet square, with two cells at the back.

On the plain, at the end of a spur, about $\frac{1}{4}$ of a mile still further N. W. is No. 48, a cave of two small cells sunk below the surface, and a large covered tank—the roof of the tank is level with the surface of the ground, and is supported by two pillars. It was nearly full of water, but, as far as we could judge, it was at least 20 feet square.

Meagre as the above catalogue is, from want of leisure as well as many other defects less easily remedied, it may serve to abridge the labours of more competent observers, by assisting them to find the caves which were shown to us, and probably many more ; for I have little doubt but that a careful and leisurely examination of the mountain, and a few rupees judiciously distributed to the shepherds and cowboys who frequent its sides, would bring to light several caves besides those enumerated. No doubt also by a careful survey of those shown to us, and by cleaning out such as are filled up, much might be dis-

covered worthy of note which escaped us. Very probably other inscriptions, besides the almost illegible remains above described, may be found, and throw a light on the date of the excavations. The only general features which struck me, as likely to assist such conjectures were, the extreme simplicity of style and general absence of all attempts at ornament, as well as of any human or other image in the places usually appropriated to the object of worship. The measurements will show the relative proportions of length to breadth in the Chaitya caves. We remarked no remains of plaster or painting. The frequent occurrence of mortices, as if for wooden door-frames, etc. has been already noticed.

H. B. E. FRERE.

Camp, Sattara Districts, February 1849.

ART. VIII.—*Geological Observations on the Igneous Rocks of Maskat and its Neighbourhood, and on the Limestone Formation at their circumference.* By H. J. CARTER, Esq., Assistant Surgeon, Bombay.

The following observations on the Rocks of Maskat and its neighbourhood are presented to the Society for two reasons. First, because they have not to my knowledge been previously described; and second, because they form the type of all the igneous masses between Ras al Had and Ras al Jazira on the south eastern Coast of Arabia, and therefore, probably, the type of most of those which have come to the earth's surface throughout the eastern angle of this peninsula.

It was my intention to have deferred the description of these rocks until I had completed a short geological statement, under preparation, of the whole of the south-eastern coast of Arabia; but as it is doubtful when this will be finished, and after all can only connect Maskat with Ras al Had by description of the intervening coast as seen from the sea, I shall avail myself of this separation to state at once what my notes of Maskat and its neighbourhood will afford.

In a geographical point of view, Maskat, as we approach it from

the sea, is characterized by a group of dark colored rocks, whose peaks become more and more visible as we near them, until one more prominent and larger than the rest points out the position of the town itself. So soon as this peak is recognized there remains no doubt of the course to be pursued, and presently we find ourselves in a deep narrow bay a mile long and half a mile broad, running parallel to the coast and open only to the N. N. W.

Nothing can be more picturesque than this bay, its green water, the dark color of its rocks, their innumerable peaks, the white towers at the bottom, and the white castles at its entrance; all of which are so completely hidden from the sea that, their existence is hardly known until we are within cross-fire of the two outermost batteries.

Much might be said of the beauty and romantic scenery of Maskat and its adjoining coves, but this is not the place for it, all that is now required being sufficient to introduce the present subject.

When at Maskat at the commencement of Dec. 1844, and again at the commencement of Nov. 1845 I went to different parts of its neighbourhood to see its geology, sometimes on foot, sometimes in a canoe by sea. But it was more particularly during my first visit that the few notes were made which are embodied in this paper. I then followed the coast north and south of Maskat, as far as the dark rocks in the midst of which this town is situated extend.

They are spread over an area of about 10 miles long and 3 miles broad and are chiefly composed of serpentine, which is limited on the coast and inland, by a yellow colored limestone formation. Their ridges and summits are sharp and peaked, and seldom exceed 400 feet in height, and their sides and valleys soilless and barren.

The serpentine is for the most part of a dark brown color and interspersed with small laminated crystals of *diallage chatoyante*. When taken from a depth it is tough and not easily broken; but on the surface crumbles and breaks into rectangular fragments, the sides of which are more or less coated with green and variegated serpentine, steatite, or calcareous spar. In some parts it is of a light brown color and earthy, while in others it is darker, more compact and more waxy or crystalline. It is exactly the same as that of the Lizard Point in Cornwall, with the exception perhaps, of the presence of green

diallage, which, however if it exist in the serpentine of Maskat is of a much duller color than that in the serpentine of the Lizard.

Everywhere these serpentine rocks at their circumference are bounded and overlapped by the yellow limestone formation mentioned, which like them is also barren and contrasts strongly with them in point of color, form and stratification.

A more extended examination of this serpentine would of course have enabled me to write more about it, but this I was unable to effect, and had I done so, the character of the rock, its variety of form, structure and composition, are points now so well known, that such information of the serpentine of Maskat, if I gave it, would probably be only a repetition of what has already been much better described, and after all, would not add much to the interest of this paper.

Proceeding southward to the limit of this serpentine, we find it bounded six miles from Maskat by a head-land named Ras Ghissa, which slopes into the sea, and has lying close to its base a little *Island* about thirty yards square, the geological section of which with that of the cape as given at p. 123. I shall now describe.

Commencing with the *Island* (Section No. 1. a p. 123.) for reasons which will better appear hereafter, we find its base (a) composed of brown serpentine, like that already described; interspersed with crystals of *diallage chatoyante*, and intersected in all directions by numerous veins of white quartz, similar to those which are common to cracked basaltic formations. On this rest the following strata:—

(b). A coarse yellow sandy deposit about three feet in thickness, and overlying it,

(c). A bed of pebbles, smoothly rounded by attrition, and frequently measuring a foot and a half in diameter. These pebbles consist of gray, compact, and sometimes variolitic basalt, petrosilex, and quartzite of various colors. I saw no granite, syenite, or even serpentine amongst them, although I sought for the latter much, and am at a loss to account for its absence, unless, from being softer and more easily decomposable than the other rocks, it has become disintegrated and has thus disappeared. Certainly one would expect to find in a sediment of pebbles like this a few portions at least of the funda-

mental rock, but my observations did not lead me to this fact, although a more extended search might perhaps have done so.

This then comprises the strata of the *Island*, and I must now state that I have given them first, because it appears to me that those of Ras Ghissa about to be described, are, if not a part, at least a continuation of them.

Commencing then at the base of Ras Ghissa, (Sec. No. I. p. 123.) with the lower-most stratum that can there be seen, we find this Cape to be composed of,

(a). A deposit of beautifully variegated sand (grit), the particles of which increase in size towards,

(b). Which is a bed of dark pebbles about 50 feet thick, smoothly rounded, and consisting of the same kinds as those of the *Island* described, but somewhat smaller, seldom exceeding six inches in diameter. Over this is,

(c). A deposit of yellow sand, without pebbles, which gradually presenting the remnant of a shell or two, and the addition of calcareous matter, at length passes into a coarse yellow siliceous limestone containing the remains of many marine shells, among which the most numerous is a small gryphaea about an inch long. Following this stratum is,

(d). A still more calcareous deposit, yellow and ochery, in which are many cellular cavities filled or lined with calcareous spar, and a great abundance of organic remains; chiefly consisting of corals and the casts of marine shells; also in this is seen again, here and there, a thin line of smooth dark pebbles of the kind already mentioned. On this comes,

(e). A pink calcareous deposit with still less silix, and composed almost exclusively of the remains of delicate polythalamous shells of the genus *Discorbis* (Lam) with the remains also of a few echinodermata (*spatangites*). This is followed by,

(f). A coarse, yellow colored, compact limestone about 60 feet in thickness, which forms the uppermost stratum of the Cape, and which like the foregoing is almost exclusively composed of the remains of white, pulverulent, polythalamous shells.

Throughout the lower strata of this Cape, black basaltic pebbles are

scattered here and there, and only disappear altogether at the commencement of the pink stratum just mentioned, wherein the presence of the remains of innumerable delicately formed polythalamous shells, points out a time at which the sea had become more settled, and the currents had ceased to bring to this spot, any more of the gross material which had preceded their advent.

The fossils which fell under my notice during the short time I had to examine these strata consisted of univalves, bivalves and corals; abundance of small foraminifera, and a few echinodermata, but no cephalopoda.

Assuming then, that the sand and pebble-bed of the *Island*, if not a part of the lower sands and pebble-bed of Ras Ghissa, are at least subordinate to them, we have the strata of this Cape lying on the serpentine of the neighbourhood; commencing with a sandy pebbly deposit, first without the presence of organic remains, then with the remnant of a shell or two making its appearance, even among the pebbles; the latter diminishing in number and giving place to sand alone; then a slight admixture of calcareous matter; the presence of the remains of more marine animals; and finally, a silico-calcareous limestone; this followed by a great increase in the number of fossils; the calcareous matter beginning to predominate; a pink stratum almost exclusively composed of the remains of polythalamous shells; and lastly, a coarse, but almost pure limestone 60 or more feet in thickness, chiefly composed, as the foregoing, of the remains of polythalamous animals.

At the same time it will be observed by Section No. 1. in the opposite page, that this transition has not been at its commencement, quite so regular as the foregoing description would seem to imply, but that a deposit of pebbles has alternated with the finer material, at unequal distances and at variable intervals of time, diminishing however in thickness until at last it has altogether disappeared.

Thus much for the limestone formation which limits the serpentine rocks to the south of Maskat.

If we now conceive an irregular line extending from Ras Ghissa to a point about three miles inland from Maskat, and carried out again to meet the sea four miles to the north of that town at a little village called Darzit, and then picture to ourselves the limestone formation

Geological Sections of the Limestone Formation limiting the Igneous Rocks of Maskat and its neighbourhood north and south.

Section No. 1.—Ras Ghissa.		Section No. 2.—Village of Darzit.	
Coarse limestone of a whitish yellow color almost wholly composed of the remains of small Foraminifera.	f.	Coarse limestone of a whitish yellow color, the upper part of which is almost wholly composed of the remains of minute Foraminifera.	f.
Loose silico-calcareous limestone of a pink color, abounding in small Foraminifera.	e.	Coarse compact yellow coralline limestone.	
Coarse yellow silico-calcareous limestone abounding in corals, casts of shells and cavities of calc-spar.	d.	Still coarser silico-calcareous coralline limestone.	e.
Sandy limestone with gryphæa ; loose yellow sand.	c.	Coarse yellow silico-calcareous sandstone with shells veins of gypsum and cavities of calc-spar.	d.
	b.	Coarse sand.	c.
Pebble bed			
Variegated sands.	a.	Pebble bed	b.
The sea.			
Pebble bed of Island.	c.		
Sandy deposit.	b.	Greenstone.	a.
Serpentine.	a.	The sea.	

N. B.—The points stand for Pebbles.

just described thrown up upon the serpentine in all kinds of positions along this line or arc, with the cord or coast-line of the serpentine zig-zagged into the greatest irregularities, forming coves and creeks in each of which is a little sandy beach, we shall have some idea of the extent and isolated position of the serpentine of Maskat, and of the principal physical features of its neighbourhood.

At Darzit the serpentine is again limited by the limestone formation, where the latter forms the northern ridge of the valley in which this village is situated.

Here it rises to the height of about 600 feet above the level of the sea, but does not rest on serpentine as at Ras Ghissa, (assuming, for reasons already stated that this is the case with the strata at Ras Ghissa) but, on an irregular surface of greenstone (*diorite B.*) composed of crystals of dull green hornblende in a mass of white, gray, or pinkish semicrystalline felspar. The appearance of this rock, which under a casual inspection for the most part resembles syenite, varies according to the preponderance of one of its ingredients over the other.

On peaks of such greenstone then, (*a.*) rests the limestone formation at this point (Sec. No. 2. p. 123.), and it commences from below upwards as follows:—

(*b.*) A bed of pebbles resembling that at Ras Ghissa in almost every particular, but which are here much disturbed, indicating a subsequent elevation of the greenstone. This deposit gradually passes into,

(*c.*) A coarse sandy stratum (grit), and then into,

(*d.*) A silico calcareous, yellow, coarse sand more or less compact, presenting numerous traces of marine shells, and intersected by veins of gypsum. Next to this comes,

(*e.*) A still more compact and still more calcareous deposit, which is replete with fossilized remains of marine animals particularly corals of *madrephyllia* and *madrastræa*. *Bl.*

Through this passes a remarkably colored, but narrow series of gypseous, marly and arenaceous strata. The gypsum hardly exceeds $1\frac{1}{2}$ inches in thickness and is of a deep amethystine color, while the other strata present different shades of yellow, blue, and green. This series is about midway between the top and bottom of the scarp. Above it comes,

(f). A coarse, whitish fawn colored, compact limestone, presenting below the remains of many marine shells and corals, and towards its upper part hardly any thing beyond those of minute polythalamous shells.

I regret much that I could not examine this limestone more particularly, for it comprises nearly the upper half of the formation; but I was prevented from doing so at the place where I visited it, by its being so scarped.

Thus, we observe that the limestone formation limiting the group of Igneous Rocks at Maskat, both north and south, commences with a deposit of the same kind of pebbles, lying in both instances on the fundamental rock of the locality; passing into a sandy grit; then into a silico-calcareous deposit; then presenting the remains of marine animals; these increasing in number with the calcareous matter; a gradual cessation of the deposition of coarse material; the increasing purity of the limestone; interrupted in each instance by a pink colored deposit, that at Ras Ghissa chiefly consisting of the remains of foraminifera, and that of the formation at Darzit of a thin series of gypseous, marly and arenaceous strata; then a compact yellowish or fawn colored limestone, terminating the series above at both places, and almost entirely composed of the accumulated remains of polythalamous animals.

May not this deposit in other places be capped by the Miliolite which I have shewn to form the upper stratum of the southern part of the desert of Akaf; to be seen on many other parts of the south-east coast of Arabia; and to be the Poor-bunder stone of Khattawar;* thus terminating these deposits upwards in the minutest forms of foraminifera that have appeared.

I saw no gypsum at Ras Ghissa, it is true, but it must be remembered that these are the notes of flying visits, and therefore I am by no means certain that there was no gypsum at Ras Ghissa, in a similar position to that in which it is found at Darzit; at the same time where it should be at Ras Ghissa, there were the cellular cavities filled and lined with calcareous spar as at Darzit.

* This Journal No. xii. p. 165.

From these many points of resemblance we can hardly doubt that the limestone both north and south of Maskat is the same, and therefore, that, the Igneous Rocks of this locality are surrounded by it inland.

In confirmation of my observations generally as regards the strata of this formation, I would cite the testimony of Captain Newbold page 27 paras. 5, 6, and 7, whose authority in such matters is as valuable as it is undoubted.*

There is one circumstance however to which I must allude, in the Maskat strata, as given by Captain Newbold at page 27, viz. that, of his having found at Maskat or in its neighbourhood a genuine specimen of Nummulitic deposit, as it exists in Sindh and Cutch. It is composed almost entirely of great and small Nummulites, if not of the same species one most closely allied to *nummularia acuta*.†

This specimen Captain Newbold states in his list, to overlie the conglomerate, (that is the pebbly deposit I have mentioned) behind Maskat. I had not the good luck myself to see it *in situ*, but the specimen presented by Captain Newbold is so genuine that there can no longer be any doubt as to the proper term for the limestone formation in the neighbourhood of Maskat, which for want of this fact only, I had been prevented from arriving at. In my cursory examination of these strata I had failed to meet with this deposit, and therefore the limestone formation in the vicinity of Maskat was an enigma to me; but it is no longer so now, and must be laid down as belonging to the Nummulitic series, though apparently much thinner here than in many parts on the south-eastern coast of Arabia.

Very much resembling the limestone formation of Maskat is that of the scattered hills of the lower Hala range at Jarrack in Sindh, a village on the Indus about 12 miles below Hydrabad. It is about 100 feet above the level of the alluvial plain, of a deep ochery color, horizontally stratified, and almost entirely composed superiorly of the remains

* Since this was written Captain Newbold is dead. He died at Mahabaleshwar of consumption on the 2nd of June last, where he was also buried. By his death India has lost her best geologist, and those who knew him well, an inestimable friend. *Author.*

† Grant's Geol. of Cutch Pl. xxiv. fig. 13.

of minute polythalamous shells, and a few echinodermata ; lower down it becomes arenaceous and abounds in a small gryphæa, not the same however as that at Ras Ghissa ; and next to the alluvial plain is traversed by veins of gypsum about an inch and half or more in thickness.

Respecting the inclination of the limestone strata about Maskat, I have already stated that, at its contact with the serpentine, this formation is thrown up in all directions, and into all shapes.

At Ras Ghissa the dip is SE. and the strike NE. At Darzit the uplifted mass presents a table-land at its summit, depressed two or more hundred feet in the centre and tilted up irregularly at all four corners, with its strata bent and fractured in every direction.

North of this uplifted portion, which does not extend more than a mile along the coast, the limestone formation for a long distance has but a small elevation above the sea, and appears to have undergone little more alteration than has been produced by the weather. This low land forms the southern termination of the maritime district of Oman, called Batana or the low country.

To the south of Maskat, however, the limestone formation presents a very different aspect ; between this town and Ras Khoriat, it is apparently all in confusion, and upheaved in masses and ridges like the waves of a troubled sea.

This commences with Ras Ghissa, which is the first ridge bordering on the Serpentine rocks, and behind it in succession are many other long ridges, which present their white fractured faces or scarps towards Maskat, and their original surfaces sloping in the opposite direction, that is, dipping towards the SE. with their strike towards the NE.

Returning to the greenstone on which the limestone formation rests at the village of Darzit, I would notice that, lying between it and the serpentine rocks forming the opposite ridge of the valley, is a mass of green chloritic, steatitic potstone, which is there manufactured into oil-jars, water-jars, etc. I also noticed and brought away with me a specimen of green carbonate of copper, which exists in small quantity, at the contact of the greenstone with the pebble bed ; likewise a piece of green earthy basalt attached to a fragment of green-

stone, which I found among the debris of the latter, and from which I infer the existence of a dyke of it through this greenstone.

Thus we find the group of Igneous Rocks at Maskat, to consist of serpentine, greenstone, and basalt, and in these three products we have the type of all the igneous masses on the south-eastern coast of Arabia from Ras al Had to Ras al Jazira, and as I have before stated probably the type of all those which have come to the earth's surface in the eastern angle of this peninsula.

At Ras al Had there are pebbles of one or more of them. At Ras Jibsh in about $21^{\circ} 27'$ N. they project above the surface of the low surrounding limestone formation called Baten or flat country, and from their contrast in shape to the low wavy limestone hills, obtain also for Ras Jibsh the name of Ras Karun or Cape Horns. Then the island of Masira is, with the exception of a small tract of limestone formation here and there supported on these rocks, almost entirely composed of masses of greenstone, serpentine, trap, and basalt. Lieutenant Greave* also kindly sent me, among many other valuable specimens and notes which I shall have to mention hereafter, portions of the same kind of serpentine from Ras al Jazira. I cannot tell if these rocks exist at the dark point of Shuamyah in Curia Muria Bay, which is the next place south-west of Ras al Jazira where the igneous matter has burst through the hitherto parallel and horizontal limestone strata of this coast, because I have never been on shore there, but I have been sufficiently near to sketch the dykes, rents, and overflowing masses made by it, as they appear from the sea.

These rocks are not mentioned in the late Dr. Hulton's account of the Curia Muria islands;† nor did I see any of them at Marbat, where there is a grand field of igneous rocks between the base of the mountains and the sea, of which I had not time to explore more than three or four miles. Nor did I meet with serpentine or greenstone between the last named place and Makalla.

There is one other formation however at Maskat which I should not omit to mention viz. the contemporaneous one, which is composed

* Commanding the H. C's. Surveying Brig "Palinurus,"

† Trans. of Geograph. Soc. of Bombay, for Dec. and Feby. 1839-40. p. 183.

of the debris of recent shells enveloping and cementing together pieces of serpentine. It is found on the borders of the bay of Maskat, from high-water mark downwards, and from its position plainly proves that the serpentine to which it now adheres, has undergone an elevation since this formation took place.

With this paper were exhibited to the Society specimens of all the rocks and deposits alluded to therein. Of the serpentine rocks at Maskat, of the greenstone, green basalt and potstone at Darzit; of the deposits of the limestone formation, with fossils collected from it on both sides of Maskat, and of the Igneous Rocks on the south-east coast of Arabia.*

ART. IX.—*Extracts from the Proceedings of the Society for the year 1848-49.*

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* For "Greave" page 128, read "Grieve."

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——— silver, 10, discovered near the village of Sangameshwar in the Collectorate of Rutnagiri	The Govt. of B'bay.

* See the description of these Coins under the head of " Proceedings, Official, Li-
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— silver, 2, discovered in the embankment of an old Tank near Sewthur in the neighbourhood of Sattara	H. B. E. Frere, Esq.
— silver, 2 small, from an old Tank near Sewthur	C. S.
— silver, 2 found embedded in the bank of a Nallah, in the old city of Champanir, (Mogul Coinage)	The Rev. Dr. Stevenson.
— silver, 9, found at Bhagwarra in the Surat Collectorate	Lieut. Glasspoole.
Draco volans, specimens of	A. F. Bellasis, Esq.
Foot of an Image of Parswanath found at Bawangaj, bearing an inscription in Pali	C. S.
Fossil Tooth of Asiatic Elephant from the neighbourhood of Kurrachee.....	L. C. C. Rivett, Esq.
Madrephyllia, two large specimens of, fossilized from the neighbourhood of Kurrachee.....	E. Impey, Esq.
Nine Specimens, shewing the transition of the ordinary green-stone of Bombay into the white rock of Koorla in the Island of Salsette.....	Dr. Stocks.
Nummular pebbles, collection of rough and polished from the neighbourhood of Kurrachee.	H. J. Carter, Esq.
Retepora Cellulosa and Gorgonia alba and flavida, specimens of, from Bombay Harbour	Cap. J. T. Newbold.
Stone-shell, specimen of used by Mulraj in the defence of Multan	Major Hughes.
Strombus, cast of, from the tertiary limestone about Barbara on the Eastern Coast of Africa	Capt. Montrion, I.N.
Wood, petrified a large specimen of, from Egypt	Lt. Col. G. P. Le-Messurier.
	H. J. Carter, Esq.
	A. N. Shaw, Esq.

ORIGINAL COMMUNICATIONS.

	COMMUNICATED BY.
Broughton (F. Esq.) Extract of a letter from, to Dr. Murray, relative to a cave in the Fort of Punalla.— <i>19th July 1849. (a)</i>	H. B. E. Frere Esq.
Burton (Lieut.) Grammar by, of the Játakí or Baluchki dialect.— <i>22nd Feby. 1849. (b)</i> ..	C. S.
—— Notes and Remarks by, on Dr. Dorn's Chrestomathy of the Pashtu or Affghan language — <i>21st Dec. 1848. (c)</i>	The Author.
Carter (H. J. Esq.) On the Red Coloring Matter of the Salt and Salt-pans in Bombay.— <i>19th April 1849. (d)</i>	_____
Frere (H. B. E. Esq.) Memorandum by, on some excavations, apparently Buddhistical, in the valley of the Khrisná near Wai.— <i>24th March 1849. (e)</i>	_____
—— Memorandum by, on some Buddhist excavations near Kudhá (with plans and drawings) <i>19th April 1849. (f)</i>	_____
Impey (Elijah Esq.) Description by, of a Colossal Jain Image, discovered in the Satpuđá range.— <i>24th May 1849. (g)</i>	_____
Jacob (Major Le Grand.) Observations by, on Inscriptions on copper-plates dug up at Narur, in the Kudal Division of the Sawant Warri State in April 1848.— <i>21st June 1849. (h)</i>	The Govt. of B'bay.
Mitchell (The Rev. J. M.) Result of recent investigations of the Religion of the <i>Vedas</i> by — <i>22nd Nov. 1849. (i)</i>	The Author.

(a.) See this No. of JI. p. 60. (b.) See last No. of JI. p. 84. (c.) See last No. of JI. p. 58. (d.) This No. of JI. p. 32. (e.) Idem pp. 55-8. (f.) Idem pp. 108-11. (g.) Idem pp. 91-3. (h.) In the Press for the next No. (i.) See this Art. Proceedings, Official, Lit. and Sc.

- Mitchell (The Rev. J. M.) Brief Review by, of COMMUNICATED
some recent investigations of the *Zend-* BY.
Avesta by German Orientalists — 24th
March 1849. (a)..... The Author.
- Newbold (Captain T. J.) On the Site of the
Temple of Neptune at Alexandria, mention-
ed by Strabo.—18th Jan'y. 1849. (b).....
- Schmid (The Rev. B.) Remarks by, on the
origin and languages of the Aborigines of
the Nilgiris, suggested by the papers of
Captain Congrave and the Rev. W. Taylor
on the supposed Celto-Scythic Antiquities
in the south of India published in the Ma-
dras Journal of Literature and Science, Nos.
32 and 33 of 1847.—21st Dec. 1848. (c) .. Rev. Dr. Wilson.
- Stevenson (The Rev. John) Observations by,
on two Silver Coins from the embankments
of an old Tank near Sewthur.— 16th Aug.
1849. (d)..... The Author.
- Stocks (J. E. Esq.) On the Punir Plant of Kho-
rassan.—21st Dec. 1848. (e).....

PROCEEDINGS, OFFICIAL, LITERARY AND SCIENTIFIC.

The Rev. Murray Mitchell, in accordance with a request of the Society, submitted specimens of the Maráthí works alluded to in his proposition of the 23rd. November last and after a short discussion it was resolved, "that the Society agree to take some of the standard Maráthí works which have been issuing from the Native Press at Bombay, and that Mr. Mitchell, C. J. Erskine Esq., C. S. and the Rev. Dr. Stevenson be appointed a Committee to make the selection, and to submit it for the approval of the Society."

(a.) See this Art. Proceedings, Official, Lit. and Sc. (b.) See last No. of this JI.
p. 77. (c.) Idem p. 50. (d.) See this Art. Proceedings, Official, Lit. and Sc.
(e.) See last No. p. 44.

With reference to the twelve silver coins presented by Col. Perry at the last meeting, and which, at the request of the Society had been forwarded to Dr. Stevenson for examination, Dr. Stevenson states, that they all belong to the *Saurarúshtra* Dynasty of Kings or Royal Satraps of Gujarat, five are the coins of *Vijaya Saha*, four of *Visva Saha*, one belongs to *Dáma Saha*, one to *Bhatrí Saha*, and the names on the other have been effaced. Further information on them may be found in the last number of the Society's Journal, also in the No. for April of Vol. V. of the Journal of the Asiatic Society of Bengal.—*January 18th. 1849.*

Captain Inglefield, R. N., proposed by James Burnes, Esq. M. D., K. H., Major J. Holland, and J. W. Winchester, Esq. was elected an *Honorary Member* of the Society.

The Committee appointed at the last Meeting, to make a selection of the Maráthí works issued from the Native Press in Bombay during the last few years, presented their list, and the works therein mentioned were ordered to be purchased.

Dr. Wilson stated, respecting some *Sáirí* Coins which were discovered near the village of Sangameshwar in the Collectorate of Ratnagiri, and forwarded to the Society by the Government for examination in July last, that he could add but little to the curious notices of these coins given by Mr. Coles of the Civil Service by whom they were sent to Government, more especially as none of the inscriptions upon any of the specimens received by the Society were complete.

They unquestionably belonged to the Sháhí dynasty of Bijápur, whose power lasted from A. D. 1501 to 1639. The name of 'Ali 'Adil Sháh, as remarked by Mr. Coles, was found on some of them but whether this was 'Adil Sháh the first or second, Dr. Wilson had no means of judging. The former prince, who began to reign in 1557, was assassinated A. D. 1579 ; the second succeeded to power in 1660, and died in 1672. On one of the coins Dr. Wilson observed the date A. H. 1061, corresponding with the Year of Christ 1641 when Muhammad 'Adil Sháh was in authority,

The form of the coins is remarkable. They consist of a silver wire about a twelfth of an inch in diameter, bent nearly in the middle, and not struck, but pressed for about two-thirds of their length, be-

tween the lips of a small vice having Arabic letters cut on its inner surface; and they are thus flattened and extended to about the eighth of an inch in breadth, except near the extremities, where the two portions of the wire, not having been brought into contact, stand out from one another and make an angle. As they have no figure, and the lettering does not cover all the surface of the coin, and as they are of unequal size and weight, though averaging about three to an 'Adil Sháhí rupee, (with a specimen of which coin of Sultán Muhamad 'Adil Sháh now very rare Dr. Wilson had compared them), these marks Dr. Wilson stated must be considered as warranting the quality and not the quantity of the metal, and they must have been tried by weight more than number when circulated. In this respect, they resembled the stamped bars of the precious metals used in remote times. The name "Sáir" which they bear is Arabic and means "custom, or excise and custom-house," and perhaps the original type of them was got from Arabia.

The *Secretary* stated, with reference to the Commission appointed by the Society in August last for obtaining authentic information relative to the number and situation of the Monuments and Cave-Temples of Antiquity in the Territories under the Bombay Government, that no Meeting of the Commission had been held in consequence of the illness of Dr. Wilson, who had kindly undertaken to prepare a series of queries for the consideration of the Commission, previous to their being circulated to the different local Authorities under Government for the purpose of obtaining the information desired, that these queries were now nearly ready, and that the Commission would be assembled in the early part of next week.

Dr. Wilson then briefly noticed what he had drawn up, and the course he thought it desirable to pursue.—*February 22nd. 1849.*

The Hon'ble Lestock Robert Reid, Esquire, *President* of the Society, having resigned his office in anticipation of his intended departure for Europe by the mail of the 1st March next, it was proposed by Colonel George Moore, seconded by the *Secretary* and carried unanimously, "that the Society record its deep sense of the obligation it is under to the Hon'ble Lestock Robert Reid, Esquire for the

ability and courtesy with which he has conducted the duties of *President*, and the interest he has at all times taken in subjects connected with the Society which have been presented to his notice."

Election of President.—Moved by Colonel G. R. Jervis, *Vice-President*, seconded by P. W. Le Geyt, Esq., and carried unanimously, that the Hon'ble John Pollard Willoughby, Esquire, be requested to accept the office of *President* of the Society, vacated by the resignation of the Hon'ble Lestock Robert Reid, Esquire, in anticipation of his return to Europe.—7th. March 1849.

A letter dated 9th March 1849, from the Hon'ble John Pollard Willoughby was read, accepting the office of *President* of the Society.

Election of Vice-President.—On the motion of James Boyd Esq. seconded by Colonel G. Moore, James Burns Esq. M. D., K. H., was unanimously chosen to fill the vacancy among the *Vice-Presidents* occasioned by the election of the Hon'ble John Pollard Willoughby, Esq. to the office of *President* of the Society.

The Rev. J. Murray Mitchell read a paper entitled, "A brief view of some recent investigations of the *Zend-Avesta* by German Orientalists."—It contained an analysis and brief review of two important articles that have lately appeared in the Journal of the German Oriental Society (*Zeitschrift der Deutschen Morgenlandischen Gesellschaft*) the one entitled "studies on the *Zend-Avesta*" from the pen of Dr. Fr. Spiegel, the other "The Legend of Feridun in India and Iran" by Dr. R. Roth. Mr. Mitchell remarked, that of the strong light that had lately been thrown on so many portions of the field of Asiatic antiquity, scarcely a ray had rested on the early history, whether civil or religious, of Persia, a subject on many accounts peculiarly interesting to the members of this Society. The two articles above mentioned were on this account most welcome. The one by Spiegel comprises much interesting matter, *preliminary* to an interpretation of the still very enigmatical *Zend-Avesta*, or sacred book of the Parsis. It contains an estimate (an unfavorable one) of the celebrated French version by Anquetil du Perron; it states the actual position we occupy as to the understanding of the *Zend-Avesta*, a point far behind that to which we have now arrived in interpreting the *Vedas*,—illustrates at length the sources from which alone a satisfactory acquaintance

with the *Zend* writings can be drawn, and particularly dwells on the importance of the Pahlvi translation both in determining the readings of the *Zend* text and aiding us in its explanation. Dr. Spiegel's article leaves a strong impression on the mind, of the immense difficulties with which the whole of this enquiry is encompassed.

The paper by Roth is singularly interesting as exhibiting a vigorous and apparently successful attempt, to establish a connexion between the *Veda* and the *Zend-Avesta* in a point where no analogy had been suspected. Feridun is one of the most renowned of the earlier heroes of Persian history, and his gallant exploits, as sung by Firdusi in the *Shah-nameh*, are familiar as household words both to the Musulman Persian, and the Parsis. With Feridun and Zohak whom he overthrew, European writers have generally held, that we first emerge out of pure fable into the dawn of true history. Sir John Malcolm identifies him with Arbaces the Mede, the conqueror of Assyria. Dr. Roth however has sought to identify Feridun with Trita, one of the old *Vedic* gods; and if his elaborate and very able analysis be correct, the old Persian hero vanishes (almost without a figure of speech) into air; for Trita is one of those elemental gods, those deifications of natural phenomena, particularly those occurring in atmosphere, which constitute the religion of the *Vedas* in its genuine form. Dr. Roth speaks in strong terms of condemnation regarding the attempt to discover substantial truth in the splendid vision conjured up by the genius of Firdusi; light can be thrown on early Persian antiquity far better from the *Vedas*, than from the writings of Mussalman authors; but this has still to be done,—and we must make the humiliating admission, that we are at this moment *totally ignorant* of Persian antiquity as far down as the days of Cyrus. All that Eastern punters relate of the Pishdadian dynasty is mythology, not history; the personages introduced were probably gods worshipped by the Arian race—they were certainly not men.—*March 22nd. 1849.*

The *Secretary*, seconded by J. Smith Esq., proposed, “that the Society's resolution respecting the Malcolmson Testimonial, passed at its Meeting held on the 13th April 1848, be carried into effect, and that the Committee of Management be requested to submit a list of works for the approval of the Society, to be purchased in accordance

with that resolution." This proposition was carried.—*April 19th. 1849.*

With reference to Dr. Giraud's letter proposing an exchange of certain Mineralogical and Geological Specimens belonging to the Grant Medical College for duplicates of Minerals in the Society's Museum, It was resolved, at the suggestion of the Museum Committee, "that Dr. Giraud's offer be accepted, and that a list of such duplicates as might be transferred to the Grant College under the terms mentioned in Dr. Giraud's letter, be submitted for the approval of the Society at its next Meeting."

The *Secretary* announced the publication of the XIIth. Number of the Society's Journal.—*June 21st. 1849.*

Bryan Hodgson, Esq., of the Bengal Civil Service, late Resident at Nepal, proposed by Colonel. G. R. Jervis, H. B. E. Frere, Esq., Bombay C. S., and James Burnes, Esq., M.D., K.H., was elected an *Honorary Member* of the Society.—*July 19th. 1849.*

The following propositions were made by Col. Jervis, seconded by Henry Young, Esq.

1st. "As it seems that the Society will have discharged its liabilities before the end of the year, and be able to begin the new year with a balance on hand, and with the prospect of a future income considerably more than sufficient to meet all ordinary charges, including the ordinary purchase of books, it is desirable to make an arrangement for slightly increasing the funds annually appropriated to the purchase of Books, especially Standard Works, and for exercising more control over the funds so appropriated, which at present are placed unreservedly in the hands of a London Bookseller."

2nd. "That it is desirable, therefore, to allow a sum of at least £320 per annum for the purchase of books instead of £300 as at present, and that only half of this be placed in the hands of the Bookseller at home, the other half being reserved in the hands of a Committee, to be appointed annually, for the purchase of such Standard Works as they may select for the different departments of the Library."

3rd. "That any Member of the Society be entitled to recommend to the Committee the purchase of any Standard Work, but that the de-

cision as to whether it be ordered or not, shall rest with the Committee alone, subject of course to a reference to the next General Meeting of the Society."

4th. "That these arrangements be brought into operation from the 1st January 1850, and that intimation of them be immediately given to all parties concerned."

Resolved, "that in accordance with Art. XVIII. of the Society's Rules, these propositions be submitted for the approval of the Society at its next Meeting."

The state of the Society's collection of Coins was discussed, and it having been observed that there was no arrangement of them whatever, neither was there any Catalogue of the objects of Natural History and Curiosities in the Society's Museum, it was resolved, "that the Museum Committee be requested to prepare such a Catalogue, and to give their earliest attention to a useful arrangement of the Society's Coins.

The Rev. Dr. Wilson, seconded by John Smith Esq., moved for consideration at the next Meeting, "that a Committee be formed to prepare a Catalogue of all the literary and scientific communications presented to the Society from the time of its formation, with notices, when obtainable, of the way in which they have been disposed of by the Society, or the Author.

Respecting the two Coins which were found in the embankments of an old Tank near Sewthur, and which were submitted by the Society to Dr. Stevenson for examination, Dr. Stevenson states:—that each weighs about four grains, and that on one side they have *Om* the symbol of the Hindu Triad, and on the other, the figure of a Man with a bird's head, which can only be meant to represent the *Garud* of the Hindu Mythology.

The *Om* is written in the form of a monogram; the principal letter of which will at once be seen to be the Telinga and Canarese *o*, with the mark over it to shew it to be *long*, as it generally is considered in Sanskrit words. The inscribed figure is the *M* of the cave-inscriptions, called in the Madras provinces the *Grantha* character. It would, therefore, seem most probable, that these fanams belong to the currency of the *Vijayanagara* Sovereigns, who reigned from the 11th

century over the west regions of the Dekkan, and extended their sway as far as Gujarat in the beginning of the 16th century of our era. This, however, Dr. Stevenson states merely as a supposition, not being well acquainted with Madras Coins.—*August 16th. 1849.*

With reference to the Society's request that the Museum Committee would prepare a Catalogue of the objects of Natural History and Curiosities in the Society's Museum, and make a useful arrangement of its coins, the *Secretary* stated, that the Committee had met, and proposed with the sanction of the Society, that two blank-paper books of a convenient size should be procured for this purpose; one to form the Catalogue, the other to form the Minute-Book of the Committee, of the Museum. In the former the Committee proposed as the several departments of the Museum were arranged, to number and enter the names of the objects contained in them, in the latter, all the minutes of the Museum Committee from their commencement and all the letters extant which accompanied the different presents for the Museum, as these records were crumbling away from their having accidentally come in contact with some destructive solution; the Committee would also propose, that the Society should employ an English writer for this purpose.

Respecting the Coins, the Museum Committee wished to place their arrangement in the hands of Dr. Wilson, *Honorary President* of the Society, who had kindly consented to give his attention to the subject at his earliest convenience.

These propositions received the sanction and approval of the Meeting and were ordered to be carried into effect.

In accordance with a resolution of the Society passed at its Meeting, held on the 21st June last, respecting an inter-exchange of mineralogical specimens with the Grant Medical College, the *Secretary* stated, that 77 specimens of Metalliferous Minerals had been selected from the Society's Collection for this purpose; and that care had been taken in their selection not to deprive the Society of the most characteristic specimens of its minerals, nor to leave it without duplicates at least, of such as had been chosen for exchange with the Grant Medical College.

Resolved, "that the 77 specimens be sent to the Grant College and that a list of them be entered on the Minutes of the Meeting."

Captain S. V. W. Hart, Professor Patton, and J. Smith Esq. having been proposed by Dr. Burnes K. H., and seconded by Dr. Wilson as members of the Committee of Management, were unanimously elected to fill the vacancies occasioned by the departure to Europe of the Rev. G. Cook, Captain Lynch, and Professor Harkness.

Colonel Jervis's propositions seconded by H. Young, Esq., respecting arrangements for slightly increasing the funds annually appropriated to the purchase of books, especially Standard Works, and for exercising more control over the funds so appropriated, were then submitted to the Meeting.

These were carried, with the exception, that the selection of "Standard Works" is to be made by the "Committee of Management" instead of "a Committee to be appointed annually for the purpose."

It was proposed by Dr. Buist, seconded by J. Smith Esq., "that a Committee be appointed to report on the state of the Catalogue, with the view of ascertaining whether it fulfils its objects, or whether it might not be desirable to have a new Catalogue drawn up for publication."

Dr. Buist's proposition was carried, and the following Committee appointed, viz., Dr. Buist, Captain S. V. W. Hart, Professor Patton, John Smith, Esq. and the *Secretary*.

For the preparation of a Catalogue of all the literary and scientific communications presented to the Society from the time of its formation, with notices, when obtainable, of the way in which they have been disposed of by the Society or the Author, the Rev. Dr. Wilson and the *Secretary* were appointed.—*September 20th. 1849.*

A letter was read from Captain Kittoe, dated the 12th October last, soliciting the Society's assistance in supplying him with fac-similes or impressions (the latter being preferable) of inscriptions in ancient Sanskrit type.

The Pali of the pillars and rocks Captain Kittoe concludes from his present investigation, to be the parent Alphabet from which all the

rest have sprung ; the changes having been very gradual, more particularly on the Western side of India.

The following is the process recommended by Captain Kittoe for taking impressions.

Good stiff bazar paper is taken, and, after wetting the stone, is placed upon it, and is again sprinkled with water, and patted down with a damp cloth, till all the blisters have gone down ; a piece of coarse gudgee cloth is then folded up thick, and placed on the paper, and hammered well with a smooth wooden mallet till the pulp has settled well into all the letters. When nearly dry, a piece of cloth saturated with either indigo, or reddle and water, is placed over the paper, and patted on with the palm of the hand. This colors the ground and leaves the letters white. Three copies are to be taken (and if imperfect specimens, even more), one only is to be coloured. They must be put loose in tin rolls to prevent the raising of the letters from injury, as it is often necessary to read backwards from the reverse or raised side.

Captain Kittoe further states that he is now engaged in transcribing numerous inscriptions which are at the same time being translated into English by able Scholars at Benares, and he proposes preparing a great table of comparative Alphabets in (as far as possible) chronological order, which he expects to prove useful in finding approximate dates to Temples, Caves, etc. This rule he has already applied, and found correct.

The *Secretary* was requested to acknowledge Captain Kittoe's letter, and in reply to state the Society's willingness to communicate with him on the subject, and to afford him all the assistance in its power.

The following report was read from the Revd. Dr. Stevenson, respecting nine Silver Coins presented by A. F. Bellasis Esq. C. S. at the Society's Meeting held on the 20th September last :—

"The nine Hindu Coins sent me for examination, are those of Māhā Kshatrapa Swāmī Rudra Sāha, Son of Māhā Kshatrapa Swāmī Rudra Dāma, the 12th and last of the Regal Satraps of Saurarāshtra, mentioned in the Journal of the Asiatic Society of Bengal. Some of them are dated 390, which, if with Mr. Prinsep we suppose to be the era of Buddha, gives us B. C. 153."

The Rev. J. Murray Mitchell read a paper entitled : *Results of recent Investigations of the Religion of the Vedas*.—Mr. M. stated that the object of the paper was to present a summary of the chief results of the more recent researches of the leading Orientalists of Germany in connexion with the Vedas, particularly of Professor Lassen and Dr. Rudolph Roth, who are probably the highest living authorities on this important subject. The Sanskrit term for God (*devas*) is derived from the root *div*, or *dyu*, to *shine* ; and the fundamental idea of the *divine* in the Veda is drawn from the bright shining sky and its varied phenomena. Essentially, the religion of the ancient Hindus was Nature-worship. The chief god of the Veda is *Indra*, the god of the sky. Next is *Varuna*, whose position and attributes, however, are very different from those ascribed to him in the later mythology of India. Next is *Agni*, the god of Fire. The *Sun* is also much worshipped ; but not the *Moon*, and scarcely the *Planets*.—The Veda, however, exhibits clear traces of another type of religion, the offspring not of a simple contemplation of Nature, but of reflection. Thus the god *Brihaspati* (erroneously identified by the later Brahmins, with the planet Jupiter) is the personification not, like the older gods, of some outward object, but of *devotion* ; he is the “lord of prayer.” *Brahmā* never was a deity of the people ; he was the product of Brāhmanical thought speculating on a Creator. *Vishnu* is quite an inferior deity in the Veda : he is the god of the shining firmament. *Shiva* seems not to be mentioned in the Veda at all ; *Rudra*, is not originally the same as he. The Veda contains no *system*, properly so called ; it never classifies or defines the objects of worship. This was afterwards done by commentators, who have often greatly misunderstood the old religion.—Of those Pantheistic views of God which have ruled so widely and so long in India, we find indications only in a very few of the latest hymns of the Veda. Of the *Avatāras*, or incarnations of Vishnu, there is no trace in the Veda. There are several allusions to “the three steps of *Vishnu*,” which have often been supposed to point to the *Vāmana avatāra* ; but on the whole this is probably not the case. The *Avatāras* would seem to have been originally only two in number. The idea of them apparently arose, not among the Brahmins, but the warlike Kshatriyas.—November 22nd. 1849.

ANNIVERSARY MEETING.

Monday, the 26th November 1849.

Election of Vice-Presidents.—P. W. Le Geyt Esq. C. S., and the Rev. George Pigott, were unanimously elected *Vice-Presidents*, in succession to the Right Rev. Lord Bishop of Bombay, who had returned to Europe, and James Burnes Esq. M. D. K. H. whose resignation had been tendered at the last Meeting of the Society in anticipation of his leaving India.

The following gentlemen were elected for the Committee of Management, Museum-Committee, and Auditors of the ensuing year, viz:—

Committee of Management.

H. YOUNG, Esq.	C. MOREHEAD, M.D.
S. S. DICKINSON, Esq.	W. HOWARD, Esq.
C. J. ERSKINE, Esq.	A. H. LEITH, Esq.
MAJOR J. HOLLAND.	CAPT. S. V. W. HART.
J. SMITH, Esq.	J. PATTON, Esq.

Museum-Committee.

THE REV. G. PIGOTT, V.P.	CAPT. MONTRIOU, I.N.
C. J. ERSKINE, Esq.	H. CONYBEARE, Esq.
A. H. LEITH, Esq.	H. J. CARTER, Esq.

Auditors.

COL. G. MOORE; A. SPENS, Esq., C. S.

The "Comptes Rendus" from their commencement and the "Lahore Chronicle" were ordered to be added to the list of Periodicals.

JOURNAL
OF THE
BOMBAY BRANCH
OF THE
ROYAL ASIATIC SOCIETY.

JANUARY, 1851.

ART. I.—*Account of the great Hindu Monarch, Aso'ka, chiefly from the Indische Alterthumskunde of Professor Christian Lassen.* BY THE HON'BLE SIR ERSKINE PERRY.

The Mussulmans of India may justly boast in Akbar of one of the greatest sovereigns whom the world has seen. Nearly a contemporary of three very celebrated Monarchs in Europe, the crafty and superstitious Charles V., the sensual and unprincipled Henry VIII., the libertine Francis I., sink into common place individuals when placed in comparison with the great Mussulman Emperor. Pre-eminent for genius in war, some of his movements recall to mind the most celebrated exploits of Alexander or Napoleon. His rapid march, for example, from Agra to Ahmedabad after the rains had commenced, when to quell an insurrection in his recent conquest of Gujerath, he placed himself at the head of his body guard; and, almost without drawing bit, reached the capital, 450 miles distant, in nine days, where by his unexpected presence he at once restored good order, is one of the most memorable feats in Indian History.

But in Civil Government he was still more distinguished, and his policy to consolidate a grand Indian Empire by a fusion of races and equal treatment of religions, bears all the marks of a great original idea. The *Ayin Akbari* is a splendid memorial of the prosperous state of Akbar's government, and the world probably never beheld a more brilliant court than that of Agra, where the 'barbaric pearl and gold' of the gorgeous East were subordinated to the exquisite taste and high intelligence, which the architecture of that period still betokens, and traces of which are still clearly perceptible in the dignified bearing and high polish to be met with even in the pettiest Mahomedan Durbar of the present day.

But a still higher phase of Akbar's character remains to be mentioned. Conquerors but too often employ their energy of soul for mere personal ambition, and self-aggrandizement; statesmen in their intercourse with the world are frequently seen to contract a contempt for their fellow-men, and to become hard and cynical. If, however, we follow Akbar into private life we find that our admiration of the Monarch is exceeded by our love for the man. His philosophic speculations with the choice spirits whom he attracted to his court, remind the reader of the learned leisure of the Antonines, but his delicate treatment of the high born Rajput, who, for the first time subdued in arms, was forced to bend the knee as a subject at his throne, displays a soul of chivalry of which even Bayard might have been proud. If Akbar in short had been a European, we might have summed up his character by stating that he possessed all the great qualities of a Conqueror, a Christian, a Philosopher, and a Gentleman.

It is impossible that the race who claims so great a man can, fail to feel ennobled when dwelling on his story. But there is reason to believe that the Hindus can also bring forward a Monarch of equally extended empire, and on whom none of the eulogiums which have been bestowed upon Akbar, would be exaggerated. It is remarkable that an English reader of History is unable to obtain any authentic account of *Asóka*, or *Dharmasóka* as he is frequently called. He was apparently unknown to Sir William Jones; even so late as 1836, James Prinsep when on the eve of his brilliant discoveries, consider-

ed him an "ideal personage;" (a) Professor Horace Wilson in the year of Grace 1849, would seem to cling to the idea, that his is only "the shadow of a name;" Mr. Elphinstone despatches him in a few sentences; and other historians make no mention of him.

And yet the materials exist for a more full and accurate history of *Asôka* than of any Hindu king who ever reigned (b). I trust therefore that whilst spending a few days vacation in a purely Hindu district (c.) where the name of the great Hindu Sovereign is still preserved, and where a beautiful grove on an adjoining hill of Asok Trees (*Jonesia Asôka*) attracts a pious crowd once a year, when according to Sir William Jones, "the vegetable world scarcely exhibits a richer sight than an *Asôka* tree in full bloom," (d). I say, I trust that I may employ my time profitably by presenting in an English dress what the great oriental scholars of Europe, Lassen, Burnouf and Ritter (but principally the former) have worked out for us from the literature of the East, and from the raw materials collected by our countrymen in India.

An authentic chapter of ancient Indian history upwards of 2,000 years old, can scarcely fail to be interesting to the English reader in this country, whether he be the hard worked official, whose important duties in the administration of government leave him but little time

(a.) Jour. of Beng. A. S. Vol. v. p. 523.

(b.) It is gratifying to national pride to think that in the three great achievements of modern scholarship in this century, the decyphering of hieroglyphics, of wedge-formed characters, and of the Lath inscriptions, the names of our countrymen Young, Prinsep and Rawlinson should stand forth so pre-eminent, and although Dr. Young was subsequently eclipsed by the more extended discoveries of Champollion, the glory belonging to the former two, and especially to Prinsep, is shared by none.

(c.) Angria's Colaba, though forming the southern headlands of the harbour of Bombay, was almost a *terra incognita* to Europeans, till its escheat to the British Government in 1840, and even now is but little visited.

(d.) It would be gratifying to think that the lovely shrub, which is known by this name as well in swampy Bengal as in the wild jungles of the Bombay Concan, is indebted for it to pious Buddhists, who thus strove to embalm the memory of their great Monarch; and the finding it in the neighbourhood of Buddhist Caves, such as Kenari and Carli, cherishes this notion; but I learn from Dr. Wilson, that the *Asôka* tree is mentioned in the *Ramayana*, the bulk of which is set down by the best Sanscrit scholars as anterior to Buddha.

for the comparatively trifling pursuits of philology and antiquities, or whether the inquiring Native student, who may be surprised to find that the most accurate accounts of the good old times of his own country are to be obtained through the literature of Europe.

Haply also, the European statesman, amid all the civilization of the nineteenth century, but with the same, perhaps even exaggerated, social evils pressing upon his attention, which engaged the benevolent *Asóka*, may pick up one or two hints for good government from the enlightened despotism of India twenty-one centuries ago. The genial climate of tropical Asia, its fertile soil, the simple wants of its inhabitants, and the absence of any densely peopled manufacturing districts, may render it more easy for an Indian Sovereign to contribute by slight acts of beneficence to the happiness of his people than it would be for a Government in Europe; yet some of the Hindu institutions, the wayside well and avenue, the groves of mango, and other fruit trees, sometimes extending for miles (*a.*) the Dharmśála or caravanserai for poor travellers, seem capable of a worldwide application, and their universal appearance in all Hindu States is a most gratifying recognition of the claims of the poorer classes of society by the rich and powerful.

The grandfather of *Asóka* was *Chandragupta* who, by a happy divination of Sir W. Jones, once much doubted but fully established by modern scholarship, is clearly identified with the Sandracottus of the Greeks. From native records but still more from the testimony of the Greek historians and ambassadors, we are enabled to obtain a tolerably clear view of this founder of the Maurya Dynasty. *Chandragupta's* birth and origin are uncertain; Buddhist accounts make him out to be of royal descent, and of the family of the *Sakyás* to which Buddha himself belonged, but the fact of his having founded an empire and of his grandson *Asóka* having made a still more powerful impression on the Asiatic mind by his conversion to Buddhism, and by his successful exertions to propagate his new faith, would readily account for the royal genealogy afterwards attributed to the founder of

(*a.*) One such tope of mango trees I saw near Goruckpur, extending for at least three miles.

the race. In a Sanscrit play (*a.*) which has for its hero the Bramin minister of *Chandragupta*, the latter is mentioned as a *Vrishalu* or *Súdra*, though he is also called a scion of the previous Nanda dynasty which he had deposed; but Lassen, on a comparison of all the authorities, feels no doubt that he was a man of low cast, though, with our knowledge of royal dynasties in India, this fact does not appear conclusively to decide that his family had not previously been seated on a throne.

On the invasion of India by Alexander, he appears to have served as a young man in the opposing forces, and there seems little reason for doubting that Justin (*b.*) contains a portion of true history, when he describes *Chandragupta* as the leader of the successful insurrection which drove the successors of Alexander out of the Punjab. But he observes that he made use of the victory to convert the liberty so acquired for his fellow countrymen into a despotism for himself..... "titulum libertatis, post victoriam, in servitutem verterat, siquidem occupato regno populum, quem ab externâ dominatione vindicaverat ipse servitio premebat."

It is probable that at this period he obtained for himself the kingdoms of Porus and Taxiles in the Punjab, and the intrigues of a Bramin named *Chanakia* are mentioned as having been very serviceable to him in placing him on the *gâdi*. He extended his possessions rapidly to the eastward, and soon afterwards succeeded in ejecting from his capital of Pataliputra, (the Palibrothra of the Greeks) (*c.*) the powerful monarch of the Prasü whom the Buddhist writers call *Dhána Nanda*, or the Nanda of wealth; but the historians of Alexander, Xandrames, the similarity of which name to the Sanscrit Xandramas (moon) is pointed out by Lassen.

It would appear that this latter victory was not obtained without

(*a.*) *Mudrâ Raxava*. 2. Wilson's Hindu Theatre.

(*b.*) L. xv. 4.

(*c.*) The site of this town seems now to have been clearly made out by Schlegel to be on the Ganges at the confluence of the Soane, and near the more modern Patna; see Ritter's Asien, V. 508; the Chinese traveller Hiun Tshan'g whom Klaproth has translated, describes the city as still flourishing, A. D. 650.

difficulty or the new kingdom enjoyed without opposition, for the Bramin minister of the ejected Nanda dynasty seems to have succeeded in forming a powerful confederacy composed of five independent Indian Rajahs, and the great king of the *Mlechas* or *Parasikas* (Parsis) who can be no other than Seleucus, the then reigning Prince of Persia. The wily Bramin *Chánakia*, however, was at hand to defeat this powerful coalition which sought to reinstate the heir of the Nandas on the throne of *Pataliputra*, for by sowing jealousies amongst them he contrived to break up their force, and *Chandragupta* from that time enjoyed the throne undisturbedly and was able to extend his rule far and wide. Lassen thinks that he even met Seleucus himself successfully in the field, and that the fact mentioned by the Greeks of the latter having exchanged the provinces of Gedrosia, Arachosia, and Paropamisus with *Chandragupta* for five hundred elephants, is only to be explained on the assumption of a successful campaign on the part of the latter against the Greeks.

From this period, however, it is clear than the relations between Seleucus and *Chandragupta* became most intimate. They interchanged presents and the celebrated Megasthenes was sent to Palibrotha as the Greek ambassador, the exact date of which important occurrence does not appear, but it was previous to the year 280 B. C. as in that year Seleucus died. If the work of Megasthenes on India had come down to us, it would have been the most important gift to the oriental Scholar, Antiquary, and Statesman, that antiquity could have bequeathed; for it would have displayed an authentic picture of the greatest Hindu Monarchy which had existed up to that time by a European Scholar of the age of Aristotle, and one apparently gifted with every endowment for truthful and philosophic narration. As it is, the industry of learned Germans of our day has collected a mass of accurate information respecting the India of that period, which is nearly all traceable to Megasthenes. (a.)

The extent of the kingdom which *Chandragupta* carved out for himself, can be ascertained much more accurately from Greek than

(a) See Swanbeck; and E. Müller's, *Fragmenta Historicorum Græcorum*.

from Hindu authorities. The latter only inform us that he reigned at *Pátaliputra*, and that he subjected the peninsula of Kattyawar to his rule. From the former we gather that his empire extended to the Indus on the one hand, to the mouths of the Ganges on the other, and to the south was only bounded by the Vindhyan range. Ougein in Malwa was therefore within the limits of his empire, and he placed his grandson *Asóka* in that province as his Lieutenant. He appears to have acquired Gujerath by conquest in the latter period of his reign, but the wild country bordering the Aravulli range, now held by the Rajputs, and never fully conquered till the time of the great Akbar, does not seem to have acknowledged his sway. If then the expression of Plutarch that he conquered the whole of India, be an exaggeration, there can be no doubt that he founded a mighty empire, and all the accounts are unanimous as to the overwhelming force he was able to maintain in arms. (a.) *Chandragupta* reigned for four and twenty years, and died 291 B. C. He was succeeded by his son *Vindusára*, of whom we know but little. *Duimachos* was sent to him as ambassador by *Antiochus Soter*, and the Greeks who do not mention him by his proper name, but under another title *Amitochates* or *Amitraghâta* (Slayer of the enemy), state that he requested *Antiochus* to buy for him some sweet wine, some figs, and a Sophist versed in the Greek philosophy. The Greek Monarch sent him the wine and the figs, but remarked that it was not usual among the Greeks to sell philosophers. Upon which Lassen remarks that as such also was not the custom amongst Hindus, the latter part of the story was probably a flourish for Greek glorification.

During the reign of this Monarch, relations were also entered into with the Greek rulers of Egypt, and Ptolemy Philadelphus sent to him *Dionysius* as his Envoy.

Vindusára is said to have had sixteen wives, and a hundred and one sons, of whom *Asóka* and *Tishya* were born of the same mother.

Asóka was sent during his father's lifetime to quell a serious insurrection which had broken out at *Taxasila* in the Punjab. On ap-

(a.) Strabo xv. 1, 53. Pl. H. N. vi. 22, 5.

proaching the city the inhabitants came out to meet him, and assured him that they were not enleagued against the Maha-Rajah but against his minister who had been oppressing them, whereupon *Asóka* made a grand peaceable entry into the town. He subsequently conquered the adjoining territory of the *Khásas*, who cannot be the people of that name in the North (Kashgar), but were probably a colony planted by the latter in the neighbourhood of the Indus.

At a later period *Asóka* was sent by *Vindusára* to *Ougein* to take charge of the province now called Malwa; the reason assigned for which move is that he had been discovered plotting against his father's life, who thereupon took steps to remove the dangerous intriguer from his capital. According to another account, *Vindusára* destined the throne for his son *Susíma*, whom a short time before his death he had sent to *Taxasila*, which had again revolted. When *Asóka* heard shortly afterwards of his father being on his deathbed, he posted without delay from *Ougein* to *Pátaliputra*, where he made himself master of the government, and put all his brothers to death with the exception of *Tishya*. It is to be hoped that this general massacre is a calumniating invention of the Bramins, although we find it narrated in the *Mahawanso*, p. 21.

If *Chandragupta* holds a distinguished place in ancient Indian history from his having established the greatest Indian empire which the world had then seen, his grandson *Asóka* shines forth much more prominently from his having been the monarch to propagate Buddhism with such wonderful ardor, and still more from his being the first Prince of whom we possess undoubted historical records in his own language. As his history is derived in great part from the inscriptions left by him, it may be useful to give a short sketch of the character and discovery of these monuments.

These inscriptions are to be found on columns, and on rocks. The latter are to be met with at *Girnar* in Kattyawar, at *Dhauili* in *Orissa*, and at *Kapur-di-giri* near Pesháwar. But as the former were the earliest made known to us, it will be well to describe them first.

The Delhi column, was the first of which notice was given to the world. It is situated near the banks of the Jumna within the old wall

of the city to the N. W., and is called the Láth, or pillar, of Firuz-Shah, because it stands in a palace erected by that Emperor; but whence he obtained it is unknown. The second is at Allahabad, and equally betokens the dominion of the Mussulmans, as it presents an inscription of the Emperor *Jihángír*, who on mounting the throne in 1605, caused it to be again erected. It had been pulled down by the previous fanatical Mahomedan rulers of India, as a monument of superstition, about the middle of the fourteenth century; and at an earlier period it must also have been prostrated for some reason or other not now ascertainable, as we find on it an inscription of the Rajah *Samudragúpta* who reigned in the fourth century after Christ, and who must have again erected the column, as inscriptions are to be found upon it which could not have been carved whilst the column was standing, and which are of a later date than the inscription of *Asóka*. This remarkable pillar maintained its old position in the fort built by Akbar, and *Jihángír* until the year 1799, when the English officer in charge who was making alterations in the fortress allowed it to be pulled down. (*a*.)

A third column is still standing on the spot where it was originally erected at Bakhra, on the road from Patna to Kajipur; it has no inscription, but is otherwise uninjured. The same part of India contains two other pillars with inscriptions, one at Matthiah in the Rajah of Bettiah's district; and one at Rádhia, near the Nepal frontier to the east of the Gandak. From so many columns being found in one neighbourhood it is easy to believe the accounts which have been handed down that *Asóka* erected very many of them throughout his territories.

They appear to have been all alike both in size and ornament, and are all of the same material, a red sandstone. Their height was a little more than 40 (French ?) feet, their circumference at the base 10, and below the capital 6 feet. The latter was ornamented with a chaplet of lotus flowers, and was surmounted by an abacus on which was a couching lion; including the lion, the capital was

(*a*.) J. of As. S. of Bengal. iii. p. 106; iv. p. 127. vi. p. 766.

6 feet in height. The lion has a clear reference to the name of Buddha, *Sákyasinha*, (The lion of the Sakyas); such pillars therefore were called *Sinhastambha*, Lion-pillars. Asóka himself terms them *Silastambha*, virtue-pillars, because he had engraved upon them his laws, and exhortations to good conduct. On this account they are also called *Dharmastambha*.

The inscription which is to be found of identical import on all four columns is divided into four parts, directed to each quarter of the heavens. On the Delhi column another inscription is found running round the pillar beneath the others, and an addition is also found to the inscription on the east face, which is wanting in the others. The Allahabad column has also got a special inscription of four lines.

The oldest of these inscriptions is dated in the twelfth year after the Maha-Rajah's coronation, the remainder in the six and twentieth year.

The second class of inscriptions which are engraved on the rock are to be found on the west, the northwest, and the east side of India. Those on the west are below the hill of Girnar, in the Kattyawar Peninsula, near Junaghur, whose old name *Javánagada* marks it out as a seat of ancient Greek dominion. They are found on a projecting block of granite, three sides of which are covered with inscriptions; the easterly one belongs to Asóka, the westerly to the king and great Satrap *Rudradáman*, the northerly to *Skandagúpta*.

The first, which alone concerns us now, is divided by lines into fourteen edicts which are so placed that the first six follow each other to the left, the second to the right, and the thirteenth and fourteenth are beneath the latter. (a.) The fourth edict dates from the 12th year after the Rajah's coronation. The third mentions a Regulation of the same year, which was, probably, then also promulgated. The eighth edict refers to an occurrence in the tenth year, but which doubtless had not been published till a later period. In the fifth edict

(a.) See 12. As. Jour. p. 153. where a lithograph of the inscription and a most valuable critical revision of the text in Roman characters by Professor H. H. Wilson, are to be found.

a general order of the 13th year is to be found. The conclusion contains no date, but from the above premises we may collect that the whole inscription was not engraved until after the 13th year.

The inscriptions of *Asôka* next to be mentioned were discovered near *Bhuvaneswara* the old capital of Orissa, on one of three low rocks called *Asvastama* near the village of *Dhauri*. The first ten edicts, and the fourteenth, correspond in meaning entirely with the preceding, but the language is somewhat different, though it is not a translation, but a repetition of the same ideas with slightly varying phraseology. There occur here also two special inscriptions not found elsewhere. These inscriptions contain no date, but the third and fourth belong to the 12th year after the coronation like the corresponding ones in *Girnar*.

The third edition of this inscription is in the Arian character, and is to be found on a block of stone standing on a rock near the village *Kapur-di-Giri*, which is situated on the small rivulet *Kâlapâni*, a day's journey to the N. of the Cabul river. The inscription on the northern side corresponds with the first eleven edicts of *Girnar*, that on the southern side with the three remaining ones. This inscription also is no translation of either of the two others, but about half of it corresponds in words with the *Girnar* inscription; the second edict is shorter, the sixth on the contrary much longer; the ninth differs greatly from the two others, the three last edicts are also much more full than those at *Girnar*.

It appears from *Asôka's* own words that he caused these inscriptions to be engraved in many other places. He not only published inscriptions of different import, but he caused the same inscription to be set up in different forms, at full length, abridged, and in a form between the two others; (a.) they were repeated thus often on account of the beauty of their contents, which it was desirable that the people should become acquainted with.

These inscriptions possess the inestimable value of giving us the

(a.) The *Girnar* inscription XIV, states. "The god-beloved benevolent minded *Maharajah*, has caused this Law to be engraved; it is (appears) with abbreviation, in a middle form, and expanded, but the whole never in any one place, confuses."

Rajah's own account in his own words of his actions and motives. They are also of the highest worth for a history of Indian languages, as they present us the oldest forms of the vernacular dialects in an authentic character, and afford a firm basis for the comparative grammar of the great, multifarious, and complicated, Sanscrit family of tongues. As an inquiry into this subject is foreign to the immediate object under discussion, and as one class of these inscriptions is still almost unknown, (*a.*) it may suffice to make one remark only, viz., that they afford us specimens of three popular languages; one on the north-west frontier, a second on the west, and a third on the east side of India; for although the Pillar-inscriptions differ in a few forms from those at *Dhauri*, they nevertheless belong on the whole to the same formation, and may be considered as the *Mâgadhi* of philologists. As this dialect is also used on the Delhi pillar, which is beyond the borders of *Mâgadha*, *Asôka* appears to have shown special favor to the vernacular tongue of his own capital, and from the prevailing usage of this affiliated form of Sanscrit, we may possibly explain why it is that the Singalese who derived their Buddhism from the same country, also term the sacred language of their books *Mâgadhi*, (*b.*) otherwise called *Pali*. The honor of having revealed to posterity the meaning of these inscriptions belongs to JAMES PRINSEP, who was the first to decipher the two alphabets in which they are written, and the first to publish and explain them. And, although on subsequent examination of the originals, a few corrections have been found necessary for several of his explanations, it must never be forgotten that he undertook this task without any special preparation in the studies connected with it, so that whoever looks upon his achievements from this point of view

(*a.*) Professor Lassen had not then seen the revised text of the *Kapur-di-Giri* inscription, 12 *As. Jour.* p. 152.

(*b.*) A bystander in the Supreme Court will also observe that the language of the Holy Books of the Jains, or *Shrawuks*, is *Mâgadhi* but we learn from the Rev. Dr. Stephenson's translation of the *Kalpa-Sutra* that the later writings of the Jains are in Sanscrit.

must acknowledge that they rank among those discoveries which mark a grand step forward in our inquiries into antiquity. (a.)

In these inscriptions *Asôka* does not mention himself by his own name, but by another, *Priyadarsin*, i. e., the benevolent-minded (according to Lassen, but the good-looking, or agreeable looking according to Horace Wilson), and to this name is prefixed the adjective, *Devânâm priya* god-beloved.

Besides these inscriptions the writings of the Singalese Buddhists form the principal source for our knowledge of *Asôka's* history. (b.)

In his youth he was appointed, as has been already stated, viceroy of *Avanti*, and resided at *Ougein*. On his journey there, he met at the town of *Kiliagiri* (which was probably in the Harowti range) with the beautiful daughter of a Seth or *Srêsthin* (c.) whom he married, and who bore him a son named *Mahindra*, and two years afterwards a daughter named *Sanghamitrâ*. (d.)

He was crowned at *Pataliputra* in the fourth year of his reign; and from this year which was 259 B. C. he dates not only his inscriptions, but other acts of his reign.

Asôka like his two predecessors belonged to the Braminical faith; his father used to feed sixty thousand bramins daily, and he himself during the first three years of his reign followed the same course. In the latter of these years he renounced his earlier faith, and became a convert to the doctrine of *Buddha*. (e.) The southern and northern

(a.) It is much to be regretted that the interesting papers of Mr. Prinsep on this subject tracing the steps of his discovery in the Bengal Asiatic Journal, should not have been collected and republished. The valuable work by Mr. Thoby Prinsep contains only the results of his brother's discoveries bearing on Bactrian and Indo-Seythian History.

(b.) In another part of his work Lassen gives a detailed account of the rich Buddhist literature of Ceylon.

(c.) Lassen explains this term to mean the head of a trade or guild Horace Wilson translates the term by the word Provost, 1 Hindu Theatre 16; and it seems probable that the city officer so well known in this part of India under the name of Nagar-sêth is the modern representation of the ancient *Srestî*, or *Srêsthin*.

(d.) Mahawanso. c. XIII p. 76.

(e.) Mahawanso. c. V.

Buddhists give entirely different account of his conversion. According to the former he was converted by his nephew *Nigrodha* the son of his eldest brother, whom he had murdered when he ascended the throne. But, if there is any truth in this tale, one portion of it is evidently incorrect, as *Nigrodha* at this period was only seven years old. After the latter had persuaded the Maha-Rajah to adopt the new doctrine, he converted the people also and confirmed them in the observation of the law. According to another version of the narrative *Asôka* appears to have become disgusted at the mode in which the bramins abused his generosity, and to have determined thereupon to examine the doctrines of other sects. (a.)

The northern Buddhists describe his conversion to have been effected by a miracle, and by another person named *Samûdra*, the son of a *behpari*, or merchant; the account therefore wants the characteristics of true history. (b.)

Even however if any real influence in *Asôka's* conversion can be ascribed to *Nigrodha* according to the former account, it must not be overlooked that the determination to give up the faith of his ancestors was chiefly caused by his own reflections on the superiority of Buddhist to Braminical doctrines. This clearly appears from his own words in which he contrasts the previous condition of things with those established by himself. Formerly, an immense number of animals were slaughtered at his palace for food. (c.) One of the fundamental laws of Buddhism, the *Ahinsa*, or non-destruction of living beings, was especially overlooked; and the disregard of Parents, of Bramins, and of Sramans had every where got the upper hand. (d.)

Since he had adopted the *Law*, this state of things had completely changed. (e.)

It was therefore the mildness of the new doctrine, the universal

(a.) Mahawanso. p. 23.

(b.) According to the *Asôka-Avadâna* (See Burnouf's Introduction à l'Histoire du Bouddhisme I. p. 365) *Asôka* at the commencement of his reign was a cruel tyrant, and was called in consequence *Kandâsôka*, *Asôka* the furious.

(c.) Girnar Inscr. I. 7.

(d.) Girnar Inscr. IV. 1.

(e.) Ib. IV 5. 6. where it is added 'obedience is now also shown to Parents and Elders.'

respect for life enjoined by it, its prevailing tendency to promote human happiness and virtue, that determined him to adopt the *Law* of Buddha and to attempt it's propagation. He not only adopted it for himself, but required his sons, grandsons, and their successors to observe it. He points out compliance with the law as the best of all works, and endowments to it as the best of all gifts. (*a.*)

In reference also to the period of his conversion his own words are much more trustworthy than the accounts of a later period. He states that he only obtained complete insight into the truth in the 10th year after his coronation; from that period he renounced the usual amusements of royalty, and dedicated himself entirely to the performance of the duties enjoined upon monarchs by the Law.

Asôka announced his conversion to the people by flourish of trumpets, and celebrated it by a grand festival, at which fire-works and other festivities found a place. (*b.*)

The intimate connection of *Asôka* with Buddhism may make it desirable for the English reader to have the principal facts of Buddha's life and history here briefly noticed, and the results placed before him of the remarkable scholarship of the present day which have made the Literature of the most distant nations, the Chinese, Singalese, Mongols, Thibetans, Nepalese, and Burmans, render up its treasures in order to complete the picture which the Buddhist and Braminical writings of India afford us.

Sakya Gautama, as he calls himself, a Kshetrya by cast, and of the royal race of the *Sakyas* who ruled at *Kapilavastu* (a town near the modern Lucknow.) (*c.*) was born in the year 593, B. C. He was educated right royally both in the arts and sciences of the day; and he spent the first 28 years of his life in the usual enjoyments of a court, and in company of his three wives, at one of his father's palaces. In his twenty-ninth year reflections on the great problems of life drove him into solitude bent on discovering a remedy for the evils which he observed to prevail in the world. Flying from the royal palace by

(*a.*) Girnar Inscr. IV, 10.

(*b.*) Girnar Inscription IV, 3.

(*c.*) See 5. Ritter's *Asien* 510.

stealth, he cut off his hair, and donned the yellow robe, which subsequently became the canonical attire of the Buddhist priesthood, and he betook himself to the fastnesses of the Rajmahal Hills. He next sought out a celebrated abode of Bramins, on a hill near *Gaya*, but soon ascertained that their practises were naught, and their doctrines bootless. He then withdrew to a solitary spot on the *Nilgán* river an affluent of the *Phalgu* where with a few disciples he spent six years in fastings and mortifications of the flesh. But finding that his mental powers became impaired by such lengthened vigils, he renounced these ascetic practices, upon which his disciples deserted him and fled to Benares to expiate the sin of their master. Thus left alone *Sakya Gautama* sat down absorbed in thought, under a *Bodhi* tree (*ficus religiosa*) and invigorated by his more generous diet he succeeded in attaining the highest state of perfect knowledge, and became a BUDDHA or Enlightened.

For the next nineteen years he wandered about northern Hindustan living entirely on alms, and making innumerable converts. His chief resting places during this period are fondly enumerated in later days by his disciples and have formed objects of pilgrimage to Buddhists from the most distant countries even down to the present times. (a.)

His royal birth secured for his doctrines a ready acceptance amongst the upper classes of society, and the Rajahs of *Kosála*, *Sravastí*, and *Ayodhia*, or Oudh as well as his own father, vied with each other in erecting spacious *Viháras*, or monasteries, to receive the devotees of the new faith. After promulgating during this period the doctrines which up to the present day have combined the greatest number of mankind, next to the Christian religion, in the same belief, this royal reformer and truly great man, feeling his end approaching, withdrew in company of a few of his disciples to a solitary tope of Saul trees near *Kusinazara* on the *Gandak*, and there breathed his

(a.) The pilgrimage of the Burmese Ambassador to Gaya will be remembered by many now in India.

last in the month of Vaisak (April-May) 543, B. C., being the twentieth year of his mission, and the fifty-fifth of his life. (a.)

It was therefore 283 years after the death of Buddha, or 260 B. C., that *Asôka* adopted the important step of embracing Buddhism. Having done so, he set no bounds to his zeal in endeavouring to propagate his new religion, and the laws and virtues enjoined by it, not only throughout his own territories, but in all adjoining countries. Many of his proclamations have this object in view. In one inscription he enjoins that a meeting should be held every fifth year, both in the countries conquered by him, and in those in alliance with him (b.) There, confession was to be made by each individual, and the leading men were carefully to expound the laws, such as obedience to father and mother, liberality to friends, relations, Bramins and Sramans, abstinence from killing any living being, from prodigality, and from evil speaking.

One of the most important events of *Asôka's* reign was the third Synod of Buddhists which he assembled in the 17th year of his reign B. C. 246. (c.) It was then determined to propagate the faith by Missions to foreign parts; and the heresies which intriguing Bramins, insinuating themselves into the *Vihâras*, under the guise of Buddhists, had been studious to introduce amongst the faithful, were then extirpated. Amongst the *Sthaviras* or Leaders (the Thero of the Mahawanso) then sent abroad *Mahadharmaraxita* is mentioned as having been dispatched to *Mahârâshtra*, and Lassen observes that this is the first occasion on which the latter name appears in

(a.) Lassen in another part of his work mentions the following authorities for his life, Collections from Thibetan works, by Csoma de Koroës, A. S. Res. xx. p. 235; Schmidt's History of the East Mongols; a life of Buddha translated from the Mongol by Klaproth, Asia Polygl.; Turnour's translation from the *Pali* commentary on the *Buddhacansa*, Jour. of the As. S. of Bengal, vii. p. 793; Burnouf's extracts from the sacred writings in his Introduction à l'histoire du Buddhisme, and Csoma's Analysis of the Thibetan *Dula*, As. Res. XX. p. 41. p. 393. ff.

(b.) Girnar Inscription, III. 1.

(c.) The first Synod was held by Kâsyapa, whom Buddha had nominated as his successor, immediately after the latter's death B. C. 543, and at this Synod the sacred books of the Buddhists were collected. The second Synod was held B. C. 433, and 12,00,000 *Bhixu* or devotees are said to have been present.

Indian History, and that it probably at this period only comprehended the narrow ancient seat of the Mahrattas in Baglana to the north of the Godavery. The Missionary however in this small district made 1,70,000 converts and 10,000 priests devoted themselves to a spiritual calling.

Asóka was also most successful in his Missionary efforts in the adjoining kingdoms on both sides of the Himalayah, and seems especially to have succeeded in extirpating the previous snake worship which had existed in Cashmire and Gandhára. This latter fact appears in the native history of Cashmire as well as in his own inscriptions. But it was not to India alone that he confined himself. For *Aparántaka*, (some place on the western frontier,) *Suwarnabhūmi*, (either Burmah as Turnour supposes, or the Arabian or Persian coast according to Lassen,) and above all Lanka or Ceylon received the *Wheel of the Law* (a) with alacrity.

To this latter island *Asóka* despatched his own son *Mahindra*, a youth of twenty, who had devoted himself to the priestly calling and a missionary life with an enthusiasm equal to his father's. These efforts were crowned with success, and the Ceylon authorities are full of most minute details of the mode in which the king *Devánampriya* and the inhabitants of Ceylon were converted to the new faith; the royal family having previously been Braminical in their worship as belonging to the great Arian race of conquerors, and the majority of Singalese being probably snake worshippers. (b.)

(a.) Bombay Travellers who have visited Ellora and Ajanta will recollect the frequency of this Buddhist symbol.

(b.) These accounts are interesting in another point of view as showing the intercourse between Ceylon and the kingdoms in the interior of India at that early period. But Lassen does not appear to have been struck with the speed at which the journies were made. Thus, the ambassador from Ceylon embarks at Jambukola near Jaffna, and in seven days makes the north coast of India in the Bay of Bengal which, although it would be respectable work for a modern clipper, is perhaps not too much for a native craft, such as we now see them in the fishing boats of Bombay harbour, during the S. W. monsoon, but then he reaches Pataliputra from the Bengal Coast in seven days more, which not even the Governor General with all the appliances of the empire could now accomplish. So also, when *Asóka* sent down to Ceylon a branch of Buddha's sacred Pipal tree, which

It is clear also that *Asóka* exerted himself to introduce Buddhism amongst the different Greek monarchies into which Alexander's conquests had been broken up. Thus in the Girnar Inscription we find him asserting that "The king of the *Javana* and further the through him (becoming) four kings, *Turámaya*, *Antigona* and *Magá* universally follow the prescripts of the Law of the god-beloved Rajah." (a.)

The name of Antiochus has disappeared from the Girnar inscription but is found in the corresponding one at *Kapur-ki-giri*, as well as those of Antigonus and Magas.

This mention of contemporary Greek monarchs is most important for Indian history. Magas king of Cyrene died 258 B. C. ; Antiochus II of Syria 247 ; Ptolemy II of Egypt 246 ; Antigonus Gonatas of Macedonia, 239 ; and it is not improbable that *Asóka* sent ambassadors to all these monarchs on ascending the throne in 263 B. C. We learn from the Greek authorities the desire which the Seleucidæ and the Ptolemies displayed, to open up diplomatic relations with the powerful Hindu kingdom on the Ganges, and although we may ascribe to oriental vanity *Asóka's* statement as to the adoption of the Law in the kingdoms of the West, we may well imagine that the enlightened and tolerant Greek Monarchs in their desire to attract eastern commerce to their new empires would readily encourage *Asóka's* efforts at proselytism.

A remarkable institution was created by *Asóka* in the 17th year of his reign, and which deserves the more notice, as the want of a similar office has often attracted the attention of Statesmen in England. Officers called *Dharma-Mahámâtra* or Ministers of Justice, were appointed to superintend the promulgation and observance of the law in all parts, both, of the kingdom, and of allied states. They were directed to be in attendance at all public places, at Markets, and

miraculously found itself in a golden basket of the Maha-Rajah, the vessel which bore it reached the mouth of the Ganges in seven days from Pataliputra, and in another seven days the vessel containing the holy cutting reached Jaffna on the coast of Ceylon.

(a.) Girnar, XIII. The fourth missing name appears in the *Kapur-di-Giri* Inscription to be Alexander, but Mr. Norris (3 As. Journ. p. 303) remarks that the name is not plain.

even in the *Zenanas* of his own family. (a.) *Mahámátra* also appear to have accompanied his sons, and other great officers as advisers, when placed in charge of a province. (b.)

Lassen remarks with justice on the extraordinary value which *Asóka's* inscriptions possess from the numerous minute circumstances which they detail, and which enable us to obtain a tolerably accurate view of the condition of Indian Society at that period, and which at the same time display, in the most favorable light, the beneficial operation of Buddhism on the actions of the Monarch. It is desirable therefore, to notice in some detail the remaining inscriptions which have not been hitherto mentioned, and I will do so nearly in the words of the distinguished German Scholar.

The influence of Buddhism displays itself in the most pleasing form in the anxiety of the Rajah to devote his whole time to the furtherance of his people's welfare both in this world and the next. He reproaches himself for having previously neglected public business, and for not obtaining information of what was going on. With a view to this latter object, he appointed special officers called *Prativedáka* or Informers, who were at all times to bring him intelligence, whether he was in his private cabinet, or amusing himself with his wife and children, or promenading in his garden, so that he might at once dispatch the affairs of State. Orders emitted either by himself, or by his *Mahámátra* he first of all laid before a Council of State, and obtained their opinion upon them. He states, that he was not at all satisfied with his own exertions for dispatching business, that he was always at work to promote the good of mankind, and he exhorts his sons and grandsons to observe the same course. But this noble minded man ought to be allowed to speak in his own simple words.

(a.) Girnar Inscription VI. 6. Dhauli. V. 4

(b.) Hereditary Bramin Officers called *Dharm-adhikari* are still to be found throughout the Deccan, in Kandesh, and even in some parts of the Concan, but I learn from Dadoba Pandurang. Superintendent of Government Schools, that their jurisdiction merely comprizes breaches of rules of cast, for which they levy fines or ordain penance, and even proceed to excommunication. It is possible that as all this country was formerly a stronghold of Buddhism we may here see one of Asoka's institutions transformed and adapted to subserve the great system of Bramin supremacy.

“For there is no content to me in the discharge or completion of business, and the noblest thing to accomplish is the good of the whole world. But the ground work of this is the discharge and completion of business; there is no higher duty than the good of the whole world. All my efforts are to remove sin from created beings, to make them happy here below, and to enable them to gain heaven hereafter. For this purpose I have inscribed the present law; may it be long preserved, and may my sons, my grandsons, and my great grandsons in the same manner strive after the good of the whole world. This is difficult to accomplish without the greatest exertions.” Girnar Inscr. VI. 8, after Westergaard's transcript.

The *Rajaka* were another species of Officers, and their duties are made known to us by the Pillar-inscriptions. They are characteristic of one of the most remarkable institutions of Buddhism. These officers were especially appointed to promote the good of the people, to obtain information of their condition whether prosperous or unprosperous, to enjoin observance of the law, and to prevent its infraction quietly and firmly by gentle persuasion; it would seem that they were not allowed to employ severe punishments. They were directed to station themselves near topes of *Pípāl* trees, so highly revered by Buddhists, and as these trees are found usually in the neighbourhood of villages, and by their grateful shade afford an excellent baiting place for travellers, the *Rajaka* could not select a better locality for mixing with the people, and ascertaining their condition. Their duties were not confined to this object however, for in another passage they are directed to expound the ordinances of the law to the faithful people. (a).

The inscriptions themselves must also be looked upon as a instrument for promulgating the Law, and for enforcing the virtues enjoined by it, as well as for preventing forbidden actions, and the sins arising out of them, for the Rajah not only recounts his actions, but expressly assigns this end for his engraved monuments. It is not only future happiness, but present, that *Asóka* exerts himself to procure for

(a) Dhauli Inscription. V. 1.

his people, and he displays himself to us in these inscriptions as one of the justest and most benevolent rulers of mankind that the world has ever seen. He regards all good men as his children. (a.) He does not limit his cares to men alone, but, in accordance with the fundamental law of Buddhism, the *Ahimsa*, extends them also to animals. To numerous birds and beasts, terrestrial and aquatic, he showed special favor, and absolutely forbade the killing of certain specified classes. For the comfort of the outer man, he planted mango topes and *pipal* trees on the highway, and at the distance of every half *Krosa* (*Kos*) he dug wells, and erected rest-houses for the night. In many places inns (or *Durramsalas*) were established for the use of man and beast.

The chief end of all his exertions however was the increase of *Dharma* in the comprehensive sense of the word which Buddhists ascribe to it, for with them it signifies not only the religious law, but also the law of nature and duties of every kind. This increase was to be effected by the observance of the two great branches of duty, submission to the law and freedom from sins. To the first branch belong charity, liberality, obedience to elders and teachers, respect to Bramins and Sramans, kind treatment of servants, and other similar virtues. Under the second branch the chief duties are the non-destruction of any fabricated thing, and non-killing of any living being : under this must be included, anger, cruelty, cowardice, envy and similar bad passions.

Three of Asóka's virtues deserve to be specially noticed ; His justice in combination with the allied virtue of mildness ; his generosity ; and his tolerance to the faith of other men.

The first is shown in his conquest of Kalinga, when the prisoners were neither massacred nor carried off as slaves. And he describes the glory most coveted by him to be, the discharge of judicial duties with justice, and the tempering of punishment with mercy.

At an early period of his reign, he abrogated several capital punishments, and appears in the latter period of his life, if he did

(a) "Every good man is my offspring." Dhauli Inscription. XVI. 5.

not quite abolish the punishment, at all events to have very seldom permitted it. Prisoners condemned to death who had been reprieved, were obliged to make pious gifts and to fast frequently during the remainder of their lives, in order to obtain happiness in the next world. (a.)

Asôka's generosity to the Buddhist priesthood has been signalized in a legend which displays the true Indian characteristic of exaggeration; it makes him give away to the assembly of the Arya (the Elect) all his treasure, his empire, his wives and children, and himself, so that at the end he possessed nothing but half of a fruit called *Amâlaka*. That he did in fact give his whole kingdom to the priesthood is stated by an inscription which was seen by the Chinese traveller Fôe at a comparatively recent period on a column in *Pâtaliputra*, and which mentioned that he had given the whole of *Jambûdwipa* three times over to the Priesthood of the four quarters of the world, and had bought it back again with gold. This however may be looked upon as merely a symbolical act, to denote his subordination to the priests, and his obligation to maintain them. The other account of his generosity towards them may be relied upon as nearer the truth, when the great extent of his empire and of his wealth is considered. His own words afford testimony of his gifts to the *Sthavira*, and of his injunctions to the *Mahâmâtra* to distribute presents among them. This liberality however had chiefly in view the furtherance and establishment of the Law; a certain class of *Mahâmâtra* with the title Benevolent, were charged to supply the Ranies and their sons with presents in order that they might dispose of them in charity and obedience to the law.

In respect of *Asôka's* tolerance, although indeed he considered that, for every relation of life, the precepts of *Dharma* were those alone which conduced to happiness and led to eternal salvation, still he recognizes the right of all mankind to live according to their own usages and manners; he is far removed from the desire of enforcing the adoption of the law by persecution, and on the contrary he seeks

to propitiate his subjects for its reception, by his counsels, his munificence, and his care for the public welfare. It is observable that except in one passage he always ranks Bramins before *Sramans*, (a.) and he holds forth the making of presents to them as a meritorious act. This tolerant spirit shines out most clearly in his treatment of the *Pâshanda*. (b.) He says that, formerly he had honored all these according to their respective manners of displaying reverence. In another passage in his 12th year, he expresses the desire that all *Pâshanda* should henceforth live in quiet, if they strove to govern their passions, and to purify their being; but he mentions no measures which he had adopted for converting them to the law. In a third passage he describes his treatment both of Bramins and *Pâshanda* more clearly; he conciliates the latter and Braminical penitents and fathers of families by gifts and honorary distinctions, not however with the view of increasing the number of the *Pâshanda*. He recognizes that they all possess books holy in their own eyes, and all sufficing Revelations. (c.) He says, there are different modes of treating them, some are well disposed, others hostile. The former he invites to listen to and obey the law, and so to use the gifts and titles of honor he bestows on them as to make their increase in power conduce to his own. To obtain this end he had appointed *Dharma Mahâmâtra*, both in the capital, and in the land of the *Vrâtya*, as well as in other provinces, and he points out as the results of this measure the great increase of the well disposed *Pâshanda* and their growing enlightenment by means of the law.

It might be tedious to relate the various marks of respect which *Asôka* exhibited to honor the memory of the founder of his faith, and it may be sufficient to state that the Buddhist accounts ascribe to him the mystical number of 84,000 *vihâras*, *stûpas*, and *Chaityas*. (d.)

(a.) This term originally means Ascetics, the *Saqqûval* of Megasthenes, but was used subsequently to distinguish Buddhist from Braminical priests.

(b.) This word is used by Bramins to denote the followers of another faith, and principally Buddhists and Jains; *Asôka* uses it to denote unbelievers.

(c.) Girnar XII.

(d.) The *Vihâra* is the collections of cells usually excavated, in which Buddhist priests lived, and of which the neighbouring island of Salsett contains such an excellent example.

But *Asôka's* architectural magnificence was not displayed in religious edifices only. In the neighbourhood of Girnar he built a grand bridge, and caused his Lieutenant *Tushaspa* to erect other splendid works in the province. Lassen concludes from the Iranic name of this officer that *Asôka* placed foreigners of merit in high posts. He enlarged also, and beautified, the city of *Srinagur* in Cashmere, and built there two large palaces.

I have been studious to select from my authorities all the passages relating to civil government which redound to the credit of *Asôka*, for on his successful efforts in this department must his chief claims to greatness in the nineteenth century depend. But it should not be omitted to state that he appears to have obtained no inconsiderable share of what may be called the more vulgar glory of kings. He added to the immense empire created by Chandragupta, the Kingdoms of *Petenika* or the west coast, Kalinga on the east, and Cashmere in the north, all of which he acquired by conquest, although the native chronicles of the latter province ascribe its acquisition to inheritance, (*a.*) but, as is clear, erroneously. His neighbours on the western frontier were the *Gândhâra*, *Gamboga*, and *Javana*, the two former being probably the names of nations in East Kabulistan, and the latter, not precisely Greeks, but the mixed population including a great number of the latter race who then inhabited West Kabulistan. To the eastward his kingdom probably included the whole of Bengal, but did not reach further in the Deccan than the southern limit of the province of *Kôla*. (*b.*)

Asôka died 226, B. C., in the 37th year of his reign, having married three years before his death an attendant on his first wife *Asundhimitrâ*, who, having embraced Buddhism with enthusiasm, died in the 30th year of the reign. (*c.*) The waiting maid does not appear to have been much better than she should be, and the passion she is said to

The *stûpa* according to Burnouf is the *tope* of northern India, implying an erection of masonry, in one word a *tumulus*; the *Chaitya* on the other hand is a *tope* consecrated to religious purposes; and it usually marks either the deposit of relics, or some action in the life of Buddha.

(*a*) Raja-Tarangiri, I. p. 101. (*b*) The modern Carnatic.

(*c*) Mahawanso, p. 122.

have displayed for the son of her husband, the beautiful eyed *Kunâla*, will remind the classical reader of Phœdra.

The subsequent history of *Asôka's* dynasty reads a sad moral to mankind as to the instability of human institutions, and displays the inherent evil existing in despotism from its inability to secure even for one generation the maintenance of ordinances almost divine in character.

The empire of *Asôka* appears to have been broken up into small principalities immediately after his death. *Kunâla*, the beautiful eyed carved out for himself a Raj in the Punjab; another son, *Jaloka*, acquired Cashmire, where he introduced the worship of Siva, and persecuted Buddhism. A third son appears to have retained a portion of his father's inheritance on the Ganges, and in a few years, or 178 B. C. the last traces of the dominion of the Mauryas disappear. (a.)

It would scarcely be proper to conclude this notice of *Asôka's* history, according to the facts deduced by Lassen from the monuments and from Pali literature, without some mention of the doubts which, the readers of this Journal are aware from Dr. Wilson's late article on the Caves, (b.) have been thrown upon the inscriptions by our great English orientalist Professor Horace Wilson. It is curious enough however, that at the very moment when the latter writer was pronouncing that scepticism should be maintained respecting them, until they had been interpreted by some person who was at once a thorough Sanscrit and Pali scholar, (c.) the scholar who has devoted more time to the critical study of these two languages than any body, probably, in the

(a.) To enable the reader to examine some of the originals of *Asôka's* history more closely, I subjoin the following references.

Girnar Inscription; Prinsep, VII. Bengal Journ. p. 219, but a far better transcript by Capt. LeGrand Jacob and Mr. Westergaard, I. Bombay J. p. 257, and revised text by H. H. Wilson, XII. As. Journ. 153.

Dhauli Inscription Prinsep, VI. Bengal Journ. p. 566; VII. Bengal Journ. 434.

Kapur-di-giri Do., Masson's Narrative, As. Journ. VIII. p. 293, and article by Norris, ib. p. 303. revised text, XII. As. Journ. 158, by Prof. H. Wilson.

Firuz Shah's Lâth, or the Delhi Pillar, Prinsep, VI. Bengal Journ. p. 566.

Allahabad Pillar; Lt. Burt, III. Beng. Jour. p. 105; Hodgson, ib. p. 481; Prinsep, IV. Beng. Journ. p. 124.

(b.) III. Bombay Journ. p. 36. (c.) J. of R. A. S. XII p. 251.

world, should be then occupied with the very investigation in question. It is therefore, probably, not necessary to notice in detail the provisional doubts which Professor H. H. Wilson, (a.) has thrown out as to the identity of *Asôka* with the Rajah *Piyadasi* of the inscriptions, and as to the connection of the Edicts with Buddhism. It would indeed be highly presumptuous for any but a profound oriental scholar to venture to offer an opinion, if two such distinguished orientalists as Lassen and Horace Wilson were in controversy; but the fact is not so, and the case is that each has been expressing independent opinions at the same time, the latter on a portion only of the subject, whilst making a most valuable collation of the *Kapur-di-Giri* text with the inscriptions of Girnar and Dhauli, the former on a critical, laborious, and evidently most conscientious, survey of all the records applicable to the subject. As each of these scholars has addressed the literary world at large, by printing the Pali text in Roman characters, every one interested in these inquiries will naturally form some conclusion or other on the premises, and I am bound to confess that when comparing the dry, lifeless, and sometimes unmeaning, version of the inscriptions by our distinguished countryman, with the results deduced by Lassen, the conviction that, in the main, true history is before me in the latter's version, becomes irresistible, and the assumptions of Professor Wilson to account for undoubted facts, with the suggestion of a myth, after the manner of Strauss, do not appear to me even plausible.

The main arguments against the identity of *Asôka* with the author of the inscriptions are founded on the absence of his own name, and on a suggested anachronism in the mention of a Greek Monarch, who flourished later than the known epoch of this Hindu king. The Rajah in these inscriptions call himself *Devânâm-piya* (God-beloved, or Theophilus), and *Piyadasi* or *Piyasi* (benevolent, or kindlooking), and it is admitted that these are not proper names but mere epithets. Whatever Monarch it was therefore, who styled himself by these epithets, he dropped the use of his own name, and therefore, the argu-

(a.) Professor H. H. Wilson, read his paper on the Rock Inscriptions before the Asiatic Society, 3d. Feb. 1849; the second volume of Lassen's *Indische Alterthumskunde* was not published till 1849, and was probably at that moment in the press.

ment 'it seems very inexplicable why, in none of the inscriptions his own appellation, *Asóka* or *Dharmasóka*, should ever be mentioned' is not more applicable to *Asóka* than to any other Rajah, and the argument is only valid to show that no Rajah with a proper name would drop it for an epithet; on which reasoning one might be driven to doubt the existence of *Cœur du Lion*, or *le Cid*. But it is not at all difficult to understand why, on such an important occasion as the adoption of Buddhism, *Asóka* should also adopt two celebrated Buddhist appellations, as we find, by the authorities cited by Professor Wilson himself, *Piyadasi* and *Devánám-piya* to be. That it was not an anomalous practice for a Hindu Monarch of that period to change his name on a great occasion, we learn from the *Mahawanso*, c. XXI, which expressly states that a contemporary of *Asóka's* did so, on mounting the throne in Ceylon. Indeed as the Singalese Monarch *Tisso*, whom *Asóka's* son converted to Buddhism, is also distinguished by the same Buddhist epithet *Devánám-piya*, it is probable that the whole of his name *Devánám-piya Tisso*, was also adopted on that occasion, the epithet from its popular Buddhist character, *Tisso*, or *Tishya*, from its being the name of *Asóka's* chief *Sthavira* or *Thero*, the son of *Moggali*, who influenced *Asóka* to send out missions to Foreign Parts. (a.) *Asóka* might also have other reasons for assuming a new name, as we learn that the Bramins had stigmatized a namesake of his on the throne of *Mágadha* by a nickname *Kál-asóka*, or *Asóka* the Black, an epithet which has never been considered complimentary amongst Hindus.

(a.) Is it possible that this similarity of name between the two Buddhist Monarchs, can have led our learned member Dr. Wilson to suggest that the passage he cites from the *Mahawanso*, in vol. III, p. 81, of our Journal, points at the Ceylon Monarch *Devánám-piya-tisso*, as the author of *Asóka's* inscriptions. The passage says, as clearly as words can express, that the son of *Moggali* sent out missions to foreign parts, and Lanka or Ceylon is enumerated amongst these foreign parts. The language therefore is clearly inapplicable to a king of Ceylon. But further it also clearly appears in another part of the *Mahawanso* who *Moggaliputto* was, viz., *Tisso* the head of *Asóka's* great *Vihara* at *Pataliputra*, and who, the southern Buddhists pretend, was the earliest follower of Buddha. See authorities collected in the 2 Lassen's *Alterthumskunde*, p. 73. I may also observe that Professor Horace Wilson has omitted to notice that the third convocation, mentioned in the passage cited from the *Mahawanso*, has received complete verification as true history

But why is it necessary to resort to speculations on the probability or reasons for *Asôka* assuming a new name, when we find him undoubtedly identified with the epithet in the *Dipawanso* (*a.*) which is not disputed to be the oldest Pali historical work remaining, and which was of such repute in Ceylon in the fifth century after Christ, that it was ordered to be read publicly. (*b.*) Lassen also states that *Asôka's* successor *Dasaratha* was called by the same epithet *Piyadasi* (*c.*)

Professor Horace Wilson, however, departing from the course of careful philosophical scepticism which he had previously adopted, gets warmed, by investigation of the subject, into positive assertion, and on discovery of a supposed anachronism he lays it down "that *Piyadasi* was the contemporary of Antiochus (the Great) or even posterior to him, is evident from the inscription, (Girnar XIII.) and therefore *Piyadasi* and *Asôka* are not one and the same person."

But this bold conclusion depends entirely on the assumption of the Professor that the Antiochus mentioned in the inscriptions is Antiochus the Great, and not his predecessor Antiochus Theos, who was *Asôka's* contemporary. It certainly seems difficult to understand on *a priori* reasoning how any relations should exist between the latter Monarch and *Asôka*, but any difficulty on this score is exceedingly enhanced, when the case of a petty ruler on the Mediterranean seaboard is considered, for undoubtedly no two Monarchs of antiquity can be pitched upon more remote in interest as well as in geography than the sovereigns of Cyrene in Africa and Palibrothra on the Ganges. Yet all scholars agree that the *Magâ* or *Mâko* of the inscriptions means Magas king of Cyrene. This conclusion seems to teach us that we ought not to attempt too curiously to reason on the existence or non-existence of facts from inherent probabilities, if the facts themselves are clearly made out to us. So difficult is it to account for the causes and motives that lead to human action, that, even in the com-

by Capt. Burt's discovery of the engraved tablet of *Asôka* near Bhabra, in which a record is preserved of the Synod in question. See J. of As. S. of Bl. IX. p. 616.

(*a.*) See J. of As. S. of Bl. VII. p. 791.

(*b.*) 2 Lassen, Indische Alth. 16.

(*c.*) Ib. 223 n.

monest occurrences of life, and where the most stringent interests exist for eliciting 'the truth, the whole truth and nothing but the truth', indisputable facts occur which baffle all the powers of human reasoning to account for. The disposition to deny facts which clash with a preconceived theory, lies deep in the human breast, and has been happily ridiculed by Moliere in *L'Amour-Médecin*, where the waiting maid's empiricism is too much for all the arguments from Hippocrates, 'Je ne sais pas si cela se peut, mais je sais bien que cela est.'

If, of the four Greek sovereigns named in the inscriptions, three of the same name are proved clearly to be contemporaries of Asóka, the obvious conclusion is that those are the parties intended, although there is little or no trace of the causes which brought them into connection. The fourth name *Alikasunari* or Alexander is enveloped in obscurity; it appears only in the *Kapur-di-giri* inscription, and an exact transcript and critical study of the text are admitted, both by Horace Wilson and Lassen, to be still wanting.

The general scholar therefore may probably rest satisfied, that Asóka's story is placed on a sound historical basis, though as to certain details there is room no doubt for much scholarly discussion, and much additional information may still be brought to light. (a.)

(a.) Dr. Stevenson of our Society, and there is no one in India more competent to form a sound opinion upon the subject, informs me that to give to the world satisfactory transcripts of the volumes of inscriptions which the Buddhist caves of *Nusik*, *Junir*, *Keneri*, and *Carli* present, and which would undoubtedly throw light upon many points now enveloped in darkness, would occupy ten years of the time of a competent scholar. As the Government of Madras with great liberality, has devoted for years past the services of a very able officer to the caves of Ajanta, where there are no inscriptions (or very few), but merely frescoes, what a noble opportunity it would be for the Government of Bombay to promote the knowledge of Indian Antiquities, by devoting a yearly expenditure of half the amount to their Western caves. An allowance of £300 a year for a few years, would probably secure the services of one of those enthusiastic scholars of the school of Lassen, whom only a German University Town, or Paris with its noble public libraries, seems capable of producing, and who would make known to us these valuable documents now daily perishing before our eyes.

ART. II.—*Ancient remains at the Village of Jiwarji near Farozabad on the Bhima.*—By CAPTAIN MEADOWS TAYLOR, Nizam's Service. (Communicated by GEORGE BUIST, Esq. L. L. D.)

The ancient remains at the village of Jiwarji though somewhat different in character from those at Rajan Koloor and Hajinitji, are yet identical in many respects with them, and whether more or less ancient, appear evidently to belong to the same family as the Celtic and Druidical or Scythic remains of England and Brittany, where they abound, as well as in Denmark, Russia and Circassia, and in parts of India, where those of the Nilgherries and the hill country to the southward of them are perhaps the most remarkable and abundant.

My own speculations on the identity of the "Cromlechs," and "Kistvaens," of Rajan Koloor and Hajinitji, with the Druidical remains of Anglesea and the other parts of Great Britain, led me to assume that they belonged to the same religion and people, however widely apart as to situation; and my speculations dim and undefined as they were, have been lately confirmed in a great measure by the perusal of a very interesting paper on the subject, of the monumental remains of the Nilgherries by Captain H. Congreve, Madras Army, which was published in No. XXXII January to June 1847, of the Madras Journal of Literature and Science, and which as far as my opinion goes, entirely justifies the assumption that the remains on the Nilgherries were those of Indo-Scythian tribes whose faith was Druidical, and who, nomadic in their habits, entered India at an early period, eventually settled there, and have their representatives in the modern Todawars or Thautawars of the Nilgherries, a race which still preserves the dress and food, mode of sacrifice and sepulture, and many of the customs of their progenitors and have avoided idolatry. !

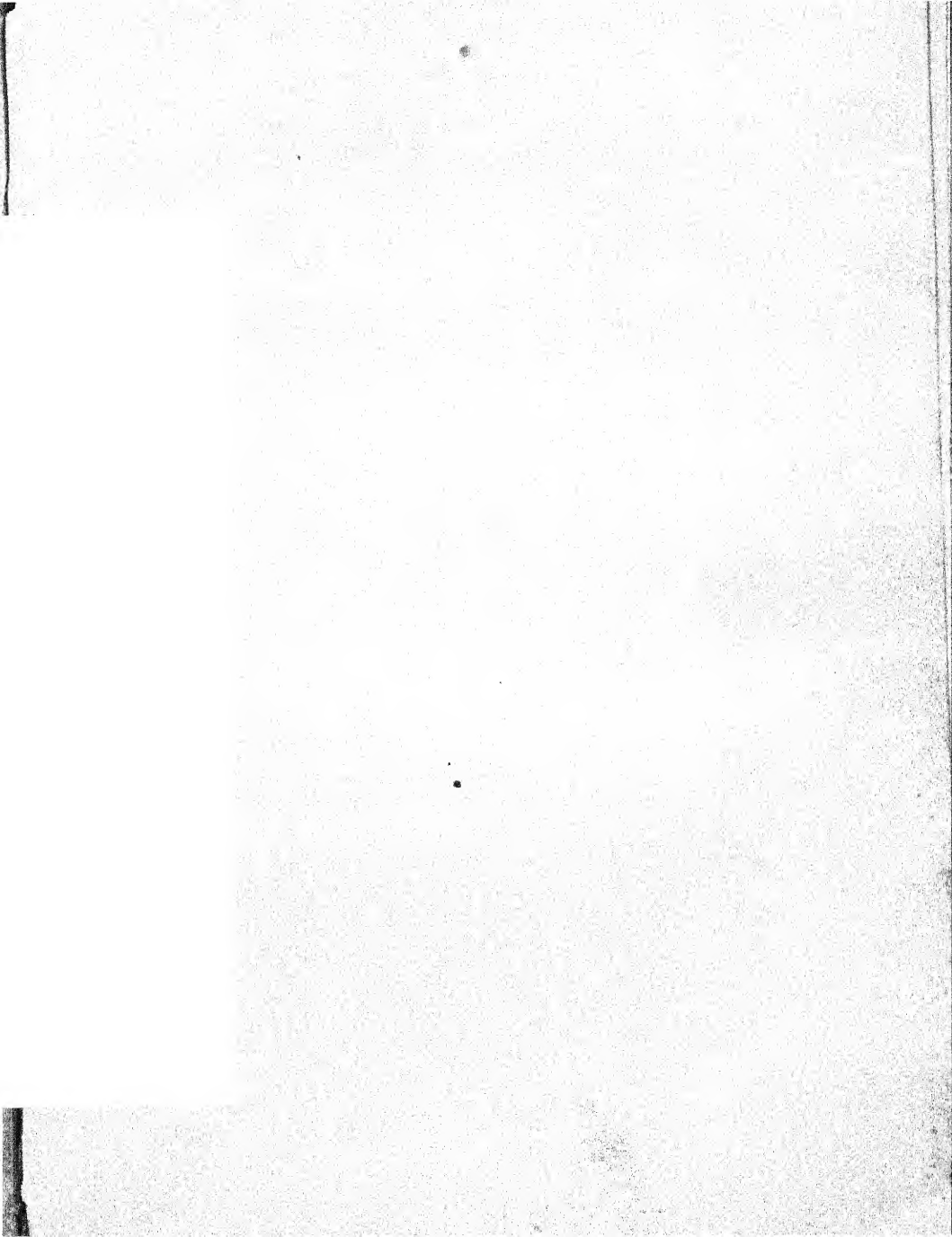
To attempt any analysis of Captain Congreve's valuable and interesting paper, would be impossible here, nor is it needed further than as authority in reference to what has come under my own observation; but all things considered, whether in relation to the size

and perfect condition of the remains at Jiwari, their great number, and absolute identity of form and contents with others referred to, I am induced to suppose that there are no more remarkable collections in India, if perhaps in the world; except those at Yemmi Good near Kana-gerry which were described to me by a native as greater in extent, larger, and more ornamented than the Cromlechs of Rajan Koloor. I now regret that I had not the whole of the Cromlechs and Kistvaens at Rajan Koloor and Hajinitji counted, but I may be able to make another visit to the place this year, when this essential particular will not be omitted. It is evident that the remains at Yemmi Good would be well worth a visit.

The Scythic Druidical remains whether of England or Brittany &c. have three general characteristics, viz. Cromlechs, Kistvaens, and Cairns, Barrows &c. the latter of various forms.

1st. Cromlechs, or stone Moles, are constructed with three flat stones or slates placed edgeways in the ground enclosing three sides of a square or parallelogram, as supports or walls, with one at the top as a cover usually larger than the others; and having one side open, usually the north or north-west. There is usually also a flooring of slabs. These Cromlechs are not as numerous at Rajan Koloor and Hajinitji as the Kistvaens or closed Cromlechs, but there are still many, and all exactly correspond with the Cromlech called Kitts Coty House near Aylesford in Kent, (a small one), with those at Plas Newydd in Anglesea, and those in Brittany and the Nilgherries. The most remarkable of the remains as to size, in England, is one of those at Plas Newydd, the dimensions of which are given as follows: viz. upper slab 12 feet 7 inches long by 12 ft. broad and 4 feet thick, supported by five stones forming the sides of the enclosure.

On reference to the drawing and measurements of one at Rajan Koloor I observe that they are as follows: viz. upper slab or cover 12 feet 3 inches long by 10 ft. 6 in. broad; side slabs 12 ft. long by 7 ft. high, including two feet in the ground; there were others differing very little indeed in measurement, and all forming noble groups. The style of erection is precisely the same in every respect with the European and Nilgherry ones, and the dimensions of the interiors also closely cor-



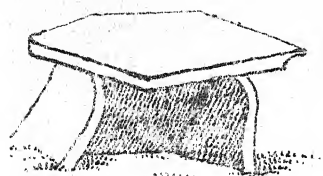


Fig. 1.

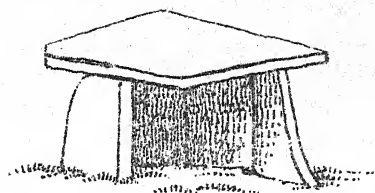


Fig. 2.

"Tombleck at Arkenney Bligh." Kitt's City House Kent.

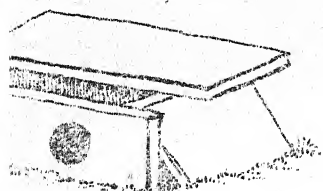


Fig. 3.

Front View.

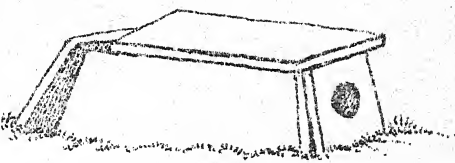


Fig. 4.

Side View.



Circular stones. b. Side. Fig. 5. entrance slabs c. Kistvaen.



3d. C.



b.



c.



4th. C.



1st. C.

Fig. 7.



respond with them. Annexed are tracings (Plate, II. figs. 1, 2), from the drawings of Cromlechs given by Captain Congreve. I did not find funeral remains such as urns or other earthen vessels in any Cromlech opened, and this tallies with results elsewhere observed. The Cromlechs therefore have been Altars, as supposed in England, or covered Temples in which funeral ceremonies were performed. Several of the Cromlechs at Rajan Koor, are surrounded by a circle of stones. This corresponds with the Cromlechs at Trer Dryn in Anglesea, and other places referred to by Captain Congreve, as also on the Nilgherries.

2d. Kistvaens or closed Cromlechs.—These are described as existing in England and Wales, “frequently occurring in those places most favored by the Druids.” They form the majority of the monuments at Rajan Koor and Hajinitji, and appear of precisely the same construction as those in England, and on the Nilgherry hills. Captain Congreve mentions them as occurring on the Mailgherry hills, 30 miles south of Ooxoor, at Naikenary on the top of the pass of that name, also in Malabar, Ungadapoor and Mungary, in south Coimbatore, in Travancore, and one at Pulliconda near Vellore.

Captain Kittoe, quoted by Captain Congreve, finds them in the forests of Orissa,—“at this place Goorsunk, I remarked a number of stones placed in the same manner as the Druidical monuments, such as Kitts Coty House near Boxley in Kent; viz. three [stones] set upright with one on the top of them. These houses are very small &c.”

Those at the Nilgherries and those I have found, are the same in one very remarkable particular, viz. the circular aperture in one stone or monolithic, as if left, as Captain Congreve suggests, for the introduction of urns from time to time. Their size differs greatly from the smallest square of 18 inches to 2 feet, to the largest of 6 to 7 feet long and 5 feet broad. Only the largest have circular apertures. In the smaller ones, the top slab or cone might be removed and replaced without much inconvenience. Captain Congreve thus describes some near the fort of Adi Raer Cottay on the Nilgherries :—

“In the sequel I ascertained that about a mile beyond Adi Raer

Cottay there were some stone edifices ascribed by the Burghas to the former Dwarf inhabitants of the Hills."

"The Kistvaens were nearly buried in the vegetable soil, a fact considering their height, (five feet), that sufficiently attests the high antiquity that may be assigned to them. When these structures occur in the low country they are found on the summits or sides of rocky hills devoid of jungle, and hence appear in the state they were originally constructed, unencumbered with soil or rubbish. After removing a large slab five feet long, three broad and one thick, which served as the roof of one of the closed Cromlechs, I proceeded to excavate the earth that had fallen inside, and reached the floor, another large flag eight feet long by six broad; here I found fragments of clay vessels, probably remains of funeral urns. The chamber being cleared, presented four walls, each consisting of an entire stone, and was seven feet long by five broad. The monolith constituting the eastern wall was pierced by a circular aperture about nine inches in diameter, adequate to admit the body of a child who I conjecture was employed to place the urns inside."

The belief is prevalent at Jiwarji, that the "Mora" People, supposed dwarfs of three spans high, constructed the remains at Rajan Kooloor, Yemmee Good, Hajinitji, &c. These remains are also attributed to fairies and dwarfs by the superstitious of Wales, Dorsetshire, Cornwall, Brittany, &c.

The monuments at Rajan Kooloor and Hajinitji are on bare open spots, and gentle rises from rivulets. The ground is hard rock or strong morum a foot to eight inches from the surface, and the Cairns and Barrows at Jiwarji, are also on a hard gravelly elevation which has only a thin surface soil.

The whole of Captain Congreve's description exactly tallies with what I saw at Rajan Kooloor and Hajinitji, and the circular aperture in the monolith or slab of the side, marks the identity very strikingly. Captain Congreve states the aperture to have been in the east side or wall, but in those I examined, it was uniformly, I think, in the south side or southwest. No other remains appear to have been found in the Kistvaens either of England or the Nilgherries, but urns

with ashes and bones, mixed with charcoal, which tallies precisely with my own experience.

Images were found in some of the Cairns &c. in the Nilgherries. I have found none at Jivarji yet, nor have any that I am aware been found in Brittany or England. This would appear to class those in England, these at Jivarji, and those in the Nilgherries in which no images were found, (the Kistvaens for instance) as the earliest, and those in the Nilgherries in which images were found, as belonging to a later class; probably corrupted by Buddhism or Jainism, which was powerfully established in the hills and in the plains below them, throughout Mysore. Druidism was not idolatry, but degenerated into it, perhaps through the Scandinavians or other Celto-Scythic tribes, and so passed into England. There is a strong affinity between Woden and Buddh or Bodh, and by many they are supposed to be the same. Could then idolatry have begun in India from Buddhism, and have spread west-wards through the Druidical religion so corrupted by the Buddhists?

It may be presumed, I think, that the absence of images in Kistvaens and Cromlechs justifies an assumption for them of a higher antiquity and purer Druidical faith than the Cairns, Barrows, &c. in which images are found.

We see therefore that the circular aperture in one monolith is common to the Kistvaens of Europe, of the Nilgherries (Congreve), of Circassia (Bell), and of Rajan Kooloor &c. The size, construction, situation in groups, contents as to ashes mixed with charcoal, &c. &c. all agree in the minutest particulars. Subjoined are tracings (figs., 3, 4,) from the drawings of a Kistvaen given by Captain Congreve. There were scores of the size given by Captain Congreve, both at Rajan Kooloor and Hajinitji, as well as smaller ones, down to the sizes like three legged stools, noted by Captain Kittoe.

3d. Cairns and Barrows.—These are found sparingly with the Kistvaens and Cromlechs in comparison with themselves. They consist of circles of large stones, sometimes single, sometimes double, enclosing a space under which is a grave, or graves, a stone-chest, or chests, in which bodies and sometimes funeral urns have been

deposited. I need hardly say that, with the Cromlechs, they are common to England, France, Germany, Central Asia and parts of India; and though minor details of form and of the articles found in them differ in unimportant respects, the general results are everywhere the same, and the form and mode of sepulture identical.

They appear to be divided into two classes, one which contains urns &c., having been filled with human ashes, bones and *charcoal*, and the other in which bodies have been interred *without* urns, filled with ashes or *charcoal*, but accompanied by rude images, arms, earthen, iron and brass utensils and the like. These may be of an era subsequent to the first, and when, though the old custom of sepulture had not been abandoned, the rude but simple faith of older times had been corrupted by idolatry.

Be this as it may, Captain Congreve's patient investigations on the Nilgherries, shew a variety of results in regard to the forms of the Cairns or Barrows, minor points differing even there; also in the nature of the relics found; but none in regard to the general features, mode of sepulture &c. between his results and those of parties in England by whom similar remains have been explored. The same kind of vases or urns containing ashes mixed with charcoal, the urns being of good strong pottery with a peculiar glaze of a rich *red* color, knives, spearheads, &c., are found in Dorsetshire as on the Nilgherries. Brass cups, beads, and often a bell, are common to both the latter, forming the strongest presumptive link that the Thautawars, to whom a bell in the sacred Dairy is an object of worship still, are the remains of these Scythic Druidical tribes in India.

At Rajan Kooloor there are many Cairns and Barrows interspersed with the Cromlechs and Kistvaens, some of these have small Kistvaens in the centre, some open at top, others closed, others have no Kistvaens but a stone only to mark the centre; but all, or most, have two slabs of stones set on edge about two feet asunder, forming as it were, an entrance to the grave on the south or southwest side, a peculiarity which I do not find mentioned by Captain Congreve, or alluded to by him as existing in England.

The foregoing will give a general idea of the connection, al-

most identical, between the three general classes of European SeythoDruidical remains, and those of the Nilgherries, Rajan Koloor and Hajiniiji, and I have no doubt whatever, that the Cromlechs and Kistvaens &c., of Yemmee Good near Kanagerry would, if examined, contribute their full share to the elucidation of this most interesting subject of investigation.

I proceed now to describe the remans at Jiwarji.—This village, one of the Kusbas of the Andola Talook, is situated, about three miles south of the Bhima river on the high road between Calburgah, Farozabad and Shorapoor. About a mile from it, immediately to the right of the high road to Farozabad, upon a rising ground sloping to the south, there are a great number of Cairns and Barrows, filling the area of a paralellogram of 336 by 216 yards. Having had the whole carefully counted, I found there were, small and large, 375. These Cairns and Barrows are of all sizes, varying from diameters of 40 feet inside the circle of stones to 68 and 10 feet respectively; some of them have single circles, others double. The double ones being usually the largest Cairns, though not always. The number of stones in these circles varies from 24 to 36 in the single circles, and from 48 to 58 in the double ones. Where the circles are double, they are from three to four feet apart, the stones forming them, being placed touching each other or at short intervals. I observed that in some Cairns with double circles, the space between the circles had been neatly paved with small flat slabs of slaty limestone, portions of which remain. Some of the Cairns have small square enclosures in the centre, probably Kistvaens, from which the top may have been removed, these are always composed of four slabs of limestone set upright, which project about a foot, more or less above the surface. The spaces enclosed being from two to three feet square. The circles of the large Barrows or Cairns are composed of large trap boulders which have evidently been brought from the rising ground to the westward about a mile distant, where the trap meets the limestone formation. These black circles of stones therefore make the Cairns very remarkable objects, as the soil they are upon is a very light coloured limestone, and as there is little or no vegetation the stones have not been covered by grass or earth, or very slightly.

I should mention also that some of the Cairns have long stone-chests formed of thin slabs of limestone laid edgeways, upright, and projecting a little above the surface. None of these have tops or lids, and the graves, (as these were,) no doubt have been filled in, (as well as the spaces enclosed by the circles of stones,) with loose stones and earth, the hard ground below not having been dug into. Possibly these were graves of the poorer members of the tribe who could not afford deep excavations.

In all, however large, the space within the circle-stones, has been filled up with loose stones and earth, rising towards the centre. The entrance-stones as I may perhaps call them are from 5 to 6 feet long, and 4 to 5 ft. high, and have been let in to the earth or stones from 3 to 4 feet. Fig. 5, is a profile of one of these Cairns and corresponds exactly with one of the drawings of some Cairns in Captain Congreve's paper. I am thus particular in description as it may be interesting and important to observe the similarity or difference which exists between these and Cairns at other places.

Having selected one of the largest and most perfect for excavation (fig. 6.) I found it of the following dimensions. Diameter of the inside circle 40 feet; outside circle 43 feet; space between the stone-circles, including the stones, 4 to 6 feet. Two upright slabs of limestone about five feet long, and two feet asunder, appeared about 18 inches above the surface of the Cairns, and near them on the southwest side I began the excavation. These slabs lay northeast and southwest, or nearly so, and the same may be remarked of all similar stones and Kistvaens in this Cemetery. A space of ten feet wide was marked off in the direction of the stones across the Cairn, and the surface-excavation was confined to this breadth, as I considered that such a trench would completely expose the contents of the Cairns whatever they might be. The loose stones and earth continued to a depth of four feet eight inches in the centre, in a circle of eight feet diameter, the sides gradually sloping upwards to the surface circle-stones. Below the loose stones, the ground was very hard and firm, scarcely yielding to the pickaxe, being morum which had formed into a concrete mass. But as nothing had appeared among the loose stones, either urns or

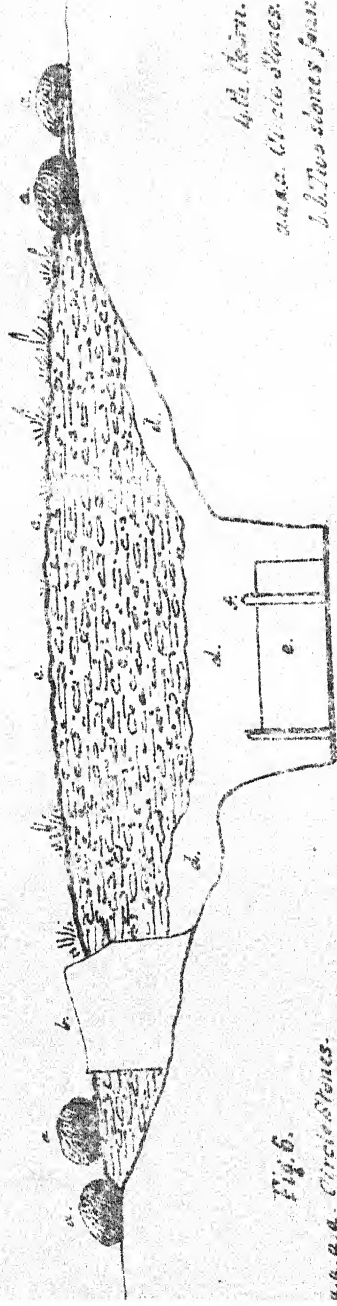


Fig. 6.

a. a. a. Circled Stones.

b. Two upright slabs 2 feet apart.

c. c. Loose stones.

d. d. Earth & Mortar.

e. Stone Chest.

f. Transverse slab.

Floor to loose stones 6 ft.

Stone to top of Cairn, 4 ft.

Fig. 6.

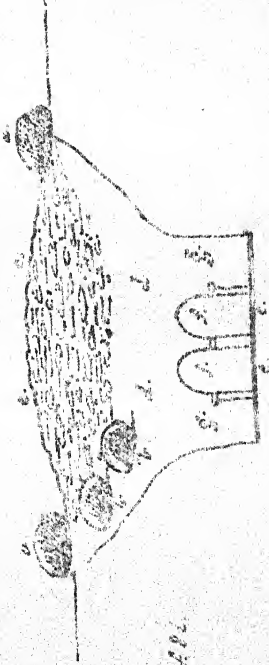


Fig. 6.

a. a. a. Circled Stones.

b. Two upright slabs 2 feet apart.

c. c. Loose stones.

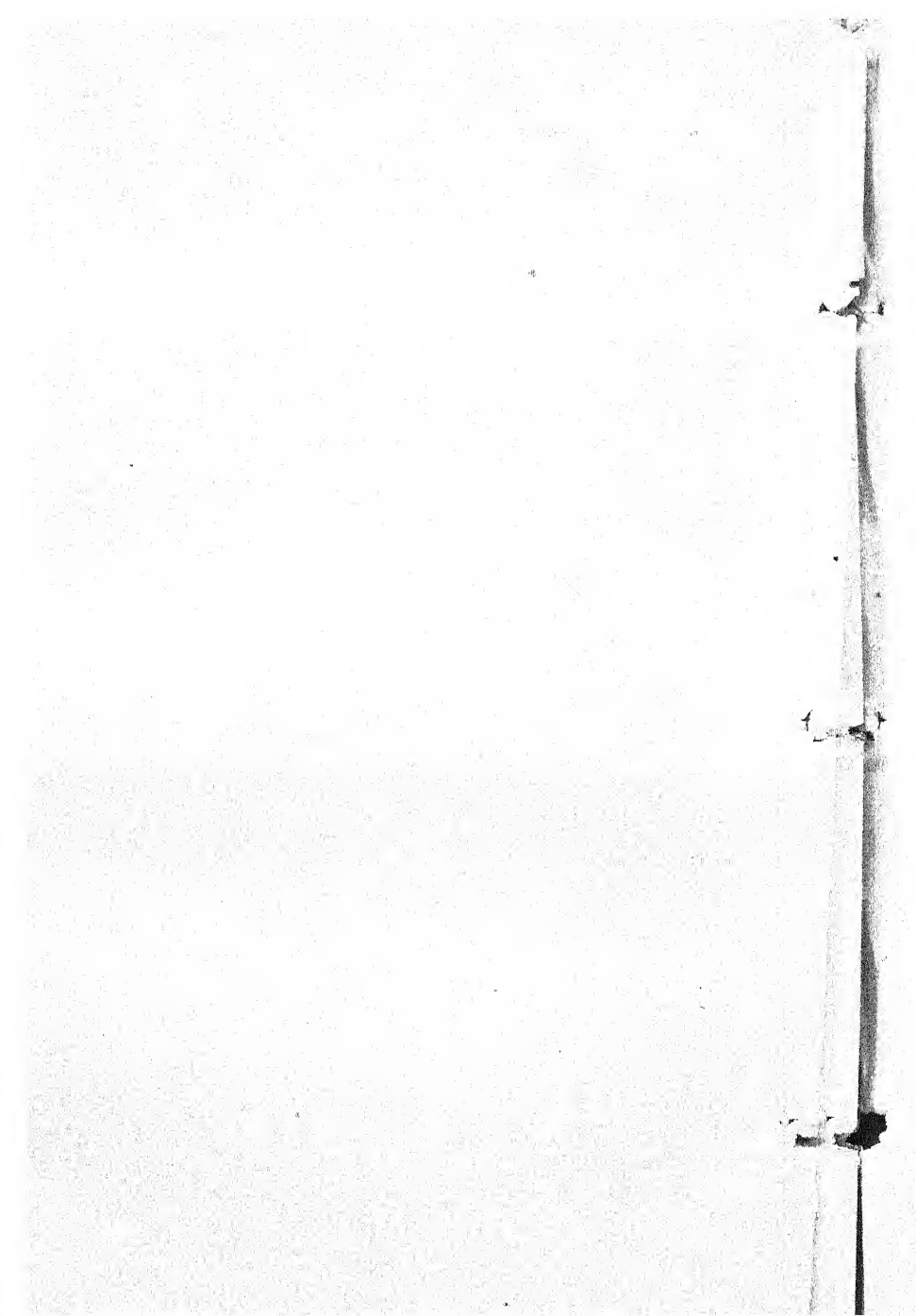
d. d. Earth & Mortar.

e. Stone Chest.

f. Transverse slab.

Floor to loose stones 6 ft.

Stone to top of Cairn, 4 ft.



stone-chest, I determined to dig as deeply as possible, supposing that so considerable a Cairn could not be without remains, and I directed the centre to be explored to the depth of at least six feet more.

The strong earth and morum continued for four feet, when a corner slab of limestone appeared, laid transversely, which having been removed, the workmen found a few bits of broken pottery and an earthen saucer that broke on the touch. The earth having been further cleared away, other transverse pieces of stone were found and afterwards the sides of two upright slabs of limestone appeared, across which the transverse pieces had been laid as it were to form a lid: there was no longer doubt therefore that this was the coffin or stone-chest, and the examination was carefully continued. The earth was however so hard and dry, that there appeared little hope of extricating any of the remains of pottery which now appeared, and the cross lid pieces of the stone-chest having broken from the superincumbent weight and fallen in, the earth above and beneath had become one mass.

The sides of the chest clearly appeared after a short time and then some portions of human leg-bones. On advancing further towards the head, the bones of the skeleton were more perfect, but so brittle that they could not be separated from the earth, at last a skull appeared, which, after some contrivance came away whole. The body it belonged to, had been laid face downwards, and the impression of the face of the skull was perfectly distinct in the earth below. Fig. 7. is an outline of the upper part of the skull as far as the eye, taken from actual measurement. I had no drawing instruments with me and when I returned the next morning I found to my regret that though the skull had been carefully put aside in a basket, the whole of the lower-jaw teeth, facial bones and nose had crumbled away. The profile of the face was peculiar; the chin having considerable projection, and the nasal bones being of unusual thickness and breadth. The two front teeth of the upper jaw were remarkably large and projected over the lower. The skull however appeared very small, but from the character of the teeth which were all perfect but one dou-

ble one (which had been carious) and the firmness of the skull and its sutures, it was evidently that of a full grown person. Below this body were two others, or their remains, but not so perfect as the upper one. The skull of one was remarkably thick and the head appeared to have been large. The length of two of the skeletons from the head to where the small bones of the toes were, were severally, the first 5 feet 7 inches, the second 5 feet 5½ inches, the third being undistinguishable. The bodies lay north-east and south-west, the heads being north-east. The only thing found in the chest was a single cornelian bead of an oblong cylindrical shape, (fig. 7). Below the bodies, slabs of limestone had been placed to form a floor.

Immediately at the head of the bodies was a cross slab of limestone, and about two feet of the side slabs appearing to remain, the excavation was continued. Behind this cross piece there seemed to have been placed one large earthen vessel and many small ones, with some earthen incense burners. The large vessel was got out whole, the rest were entirely broken or fell to pieces on being exposed to the air. Continuing the excavation about three feet northward, the natural side of the tomb appeared, shewing that the bounds of the grave had been reached. In this portion of the grave some pieces of iron, evidently spearheads, were found, but much decayed, and a weapon (fig. 8) by them, but no ashes or charcoal, nor did the vessels contain anything but earth; probably it may have been the custom to fill the earthen pots with grain, milk, ghee, &c., and deposit them with the bodies at interment.

The earth appearing loose on each side of the stone-chest it was excavated down to the floor of the tomb. On the west side remains of two thin skeletons appeared of smaller size, possibly those of women, with some earthen incense burners &c., but the earth being soft and damp here they could not be removed. The eastern side was filled up with small earthen cups and vessels, incense burners &c., of these figs. 8, & 9, were got out entire. They are very neatly made, and are either of red glazed pottery of a bright red colour or half red and half black. The glaze is inside as well as outside.

By the side of these vessels, a small iron-tribod and two spear-heads much decayed were found. Some other pieces of iron were so decayed as to be undistinguishable in form.

The second Cairn examined had a double ring of stones measuring 16 feet in diameter, with 4 feet on each side, total 24 feet. The excavation was begun at the upright stones above the ground in the south-west side, and a little below them were two large pieces of trap-rock. The loose stones continued to a depth of three feet, after which morum and earth to a depth of five feet two inches, making in all eight feet. In the centre of the excavation the remains of a human body were found, but no portion of it was entire, portions of leg and thigh-bones of great thickness and strength, and part of a very thick scull were all that was distinguishable. On the west and east sides of the body were the usual small earthen pots &c., and in considerable quantity, but the concrete formed by the limestones, earth and morum was so hard that no entire vessel could be got out. With these were the remains of three spear-heads of iron much decayed, but still distinguishable in form (fig. 10.)

There was no stone-chest or coffin in this Cairn and the body had been laid on the bare floor of the grave, which was 7 feet long by 4 broad, including the space taken up by the vessels on the east and west sides. The remnants of pottery were of the same colour and form as those of the first Cairn examined.

The third Cairn was 16 feet in surface diameter and had also a single ring of stones of large size, measuring usually 3 feet long, 2½ broad and 14 to 16 inches thick of irregular forms, (trap boulders). It may be mentioned that the circle-stones of all the cairns are the same size or thereabouts. The excavation was begun and carried down as in the others and continued to a depth of 8 feet 9 inches, of which the loose stones were three feet from the surface, and earth for the remainder. The earth in this Cairn was looser and more easily got out than in the others, and at the floor of the grave fourteen small vessels of various sizes were obtained, some quite entire, others slightly cracked or chipped. No trace of former remains was found by them, but this may be attributable to the com-

parative soft quality of the earth, in which the body had doubtless entirely decayed. Some remnants of iron, and among them part of two heads of spears, and a flat pointed piece which may have been portion of a sword (figs. 11, 12, 13). The earthen vessels were of the same colour, red and black, as those in the other cairns, and all glazed.

The area at the bottom which contained these remains was eight feet long by seven wide. There was no stone-chest, nor upright slabs forming a lining for the sides or to contain the body.

The fourth Cairn had 24 feet of surface-diameter and a double ring of stones, making in all 32 feet. The stones were of limestone breccia which is found near an adjacent rivulet. The same loose stones continued to a depth of four feet, after which there was gravelly earth. At a depth of 6 feet 6 inches from the top there were some transverse lime-stone slabs, of which a few were whole and others broken and fallen in; clearing away these carefully, the sides of two stone-chests or coffins appeared, that is, the two long slabs north and south, as nearly as possible, forming the outside boundaries of the chests; and one entire piece in the middle $1\frac{1}{2}$ inches thick dividing the space into two; the whole length, was from 6 feet 6 inches to 7 feet; the breadth of each division 1 foot 8 inches. At the feet were upright slabs fitting closely into the breadth of each chest, and similar pieces 2 feet 8 inches high at a distance of 5 or 6 inches from the feet. The whole space enclosed therefore was 5 feet 6 inches long, 1 foot 10 inches high, and 1 foot 8 inches broad, the slabs being neatly put together.

The earth being carefully removed, the remains of one person in each grave were observed. The one to the east was more perfect than any yet seen, and the bones of the thighs and legs, pelvis, arms &c. could be easily traced though they broke on being touched. On removing the earth carefully from the head, it was found nearly whole resting upon its left side with the face to the earth. The teeth were entire in the upper jaw and their enamel still bright; and also enough of the skull to allow of my sketching the profile from actual measurement as it lay (fig. 14). The teeth of the upper-jaw were



1st. Cairn.



4th. C.



4th. C.



1st. C.



1st. C.



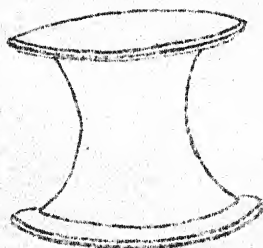
1st. C.



4th. C.



1st. C.

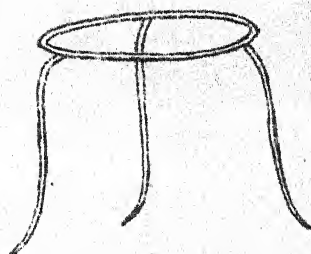


1st. C.



4th. C.

4th. C.



1st. C.



1st. C.

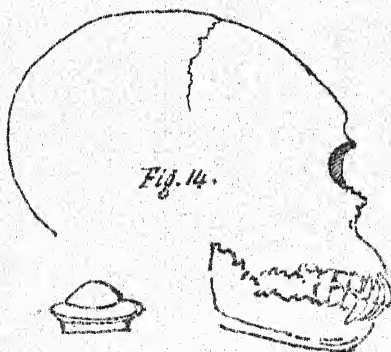
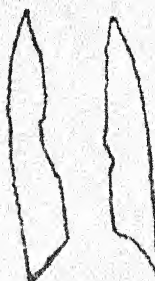


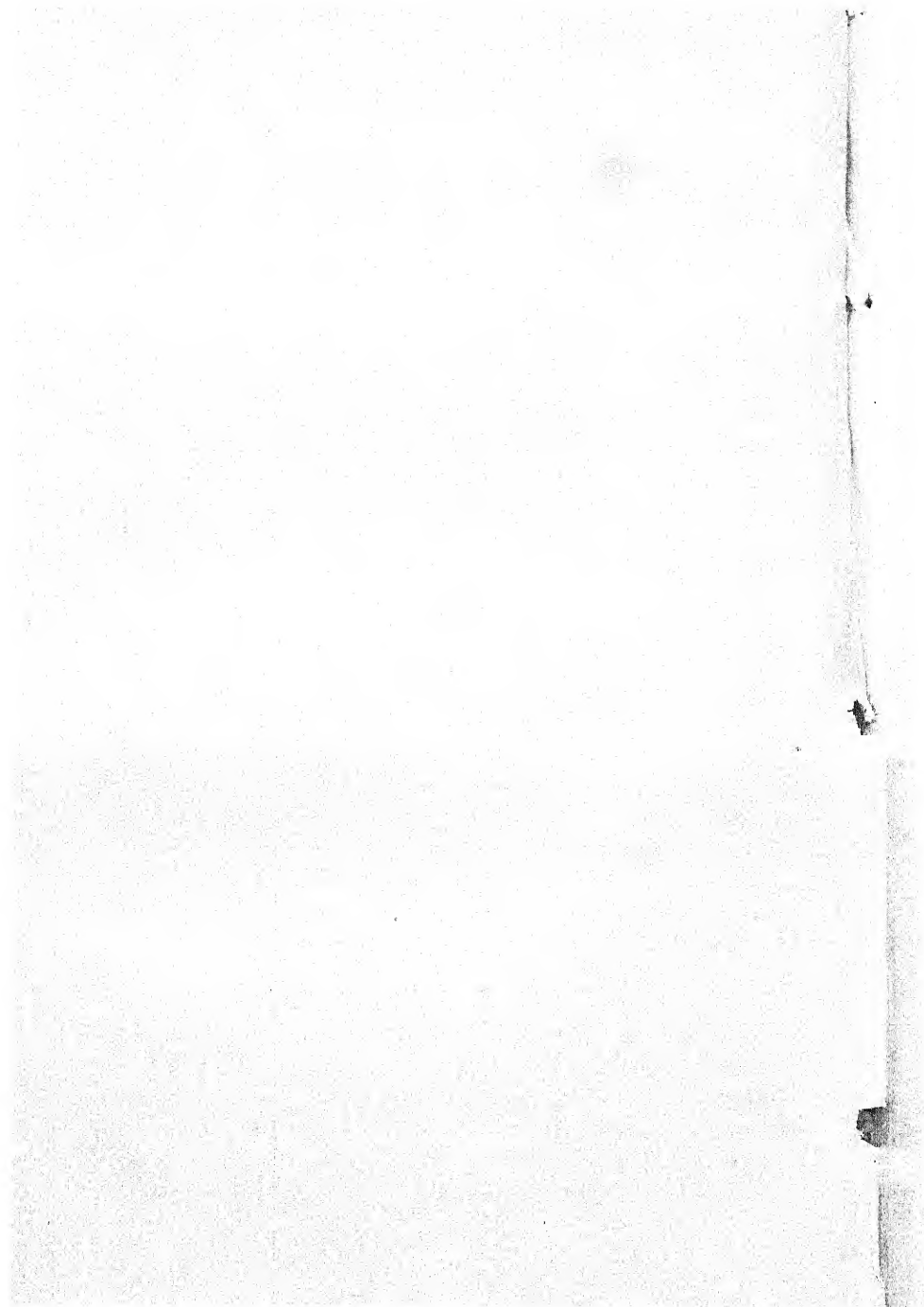
Fig. 14.



1st. C.



4th. C.



large and remarkably thick, and projected somewhat over the lower ones. It was impossible to remove the skull entire as it had become decayed and adhered firmly to the stone-floor of the grave.

The entire length of this skeleton was five feet two inches from the crown of the skull to the feet, which had rested against the foot-slab, and there was a space of four inches between the skull and the upright head-stone of the chest. The skeleton to the west was not so long by two inches, but the bones of the legs and arms as also such portions of the skull as came away whole were much thicker and stronger.

The two head-slabs were next removed. Behind the eastern body were some remains of pottery and the legs of an iron tripod one, of which came away whole. The earth being further removed northward, a portion of a skull appeared which could not be got out entire. There were no other bones with it, and the head appeared to have been placed on the top of the earthen vessels with which the space was filled. Could this single skull have been the head of a person sacrificed at the funeral rites of the skeleton? I can give no other supposition than that it was; no such head appeared in any of the other tombs, and it may have been, from the evident care bestowed on the formation of this grave above the other small ones, that its occupants were persons of some consequence.

I did not attempt further excavations, as I considered that enough had been done to establish the identity of these remains with those of similar classes elsewhere. Whether this has been the case or not I leave those to decide who may be better judges in such matters than myself. But the following is a brief recapitulation of the principal points, not only as regards Cromlechs and Kistvaens, but as regard the Cairns at Jiwari.

1st. The Cromlechs are exactly of the same construction with those of Europe and the Nilgherries, the sizes of the largest tallying with the principal ones which have been examined and measured elsewhere. They do not, as far as I have opened them, contain funeral remains, and therefore may have been Temples or Altars only for the performance of sacrifices or other ceremonies. The fact of their being associated with Kistvaens and Cairns in the same cemeteries,

may give strength to this supposition. The traditions regarding those erected by dwarfs or fairies are identical with those of Europe, the Nilgherries &c.

2d. Kistvaens or closed Cromlechs. These also are identical with those of Great Britain and the Nilgherries, &c. They have all contained earthen urns, which have been filled with human ashes and bones mixed with charcoal, agreeing with the results obtained in England and in the Nilgherries. No idols or images have been found in any opened, nor have the urns had figures for handles or tops, but the colour of the earthen vessels is the same. The circular aperture in one of the monolithes of the Kistvaens, agrees entirely with that elsewhere noted, and is a remarkable feature in their identification.

3rd. Cairns and Barrows. These supply the same points of identification and resemblance with others. They are invariably round, and have either single or double circles of large stones or rocks round them. The centre is invariably elevated and consists of loose stones filled in over the earth of the grave below, to a depth of 3 to 4 feet. The graves contain stone-chests or coffins, or neat slabs of stone placed so as to form chests or coffins, covered by transverse slabs. These chests contain one or more bodies with earthen urns &c. on three sides, east, north and west; none have been found to the south, or towards the feet of the bodies. Portions of spear-heads and other iron weapons have been discovered with the urns laid by the side of the bodies, but no images or idols as in some of the Nilgherry Cairns, nor any rings or brass vessels. The bodies are interred at a great depth from the surface varying from eight to ten feet.

Other particulars might perhaps be mentioned, but enough has been stated to prove I think the position I have assumed. The grand question now remains as to whose these monuments were. I have little doubt myself that they were those of nomadic tribes of Druidic Scythians who penetrated into India at a very early period and who must have formed local settlements in various parts, the last of which were probably in the Nilgheries. Some speculations have been made that these were the remains of Jains or Buddhists, but we know the modes of sepulture in both castes to be entirely different

from these, (and that arms were never buried with their dead), and had they been Hindu or Buddhist it would have been impossible that they should not be much more numerous than they are. They are not sepultures of Hindus, who usually bury (where they bury,) in a sitting posture, while those distinctive marks separate them from all other tribes except those who are acknowledged to be Druidical.

There has been I am aware much speculation on the subject of invasions of India by Scythic tribes from central Asia, and the theories of Colonel Tod and others on the subject in regard to their amalgamation with Hindoo tribes or identity with them must be familiar to all. We have however no trace of them subsequent to the invasions of Alexander. But Mr. Elphinstone quotes various authorities in regard to their invasions into India and partial occupation of the country in remote periods of antiquity. There can be little to affect the supposition or presumption that these people so far removed from their native land, may have become, as they settled, gradually mixed with the aborigines of the country and absorbed with them into the Hindu and Buddhist masses; and their funeral monuments are therefore interesting as shewing how far they penetrated into India, where they settled and how far they observed the rites and ceremonies of their ancient faith, in correspondence with the Druidical remains of Western Europe, and links which are found to obtain between, —westwards and eastwards.

I have no knowledge of these remains in the central portion of India beyond those I have now described. I have heard that Cairns have been met with near Hyderabad, but am for the present entirely ignorant of their situation and number, and also whether they are accompanied by Cromlechs and Kistvaens or not. I myself have never observed any elsewhere; but that they may exist in greater numbers than these to the south and southwest may be inferred perhaps from the account of the remains at Yemmee Good, which may have been the great cemetery of the whole of this portion of India. Hindus collect the ashes of relations and carry them to the Ganges from all parts of India, and why not the Druidic Scythians to such places as were esteemed sacred by their tribes, which, from their nomadic character were, probably, widely scattered.

Note by the Secretary.—On the southeast coast of Arabia in lat. $16^{\circ} 55' N.$ and long. $54^{\circ} 5' E.$, is the small cape called Ras Resût which protects a bay of the same name from the southwest monsoon. It forms the western extremity of the famous district of Dofar. This cape is about two hundred feet high and about half a mile broad, and is narrowed at its extremity, which is prolonged into the sea by a small island or rock. It is composed of the white and gray limestone of the coast, and is much scarped, and irregular on the summit from denudation.

On its extremity are the remains of a small round tower of rude construction, and heaps of stones, the ruins of former buildings, equally rude. The latter extend over an area of two acres, and are limited by a wall across the cape which formed the defence of the place.

About half a mile from the latter, still on the ridge of the cape, comes an ancient Burial-Ground, extending over an area of three acres. The graves are marked by nothing but a circle of large boulders surrounding a heap of loose stones, or what formerly was a heap of stones, sunken in the centre. The larger of these graves measure from six to twelve yards in diameter, and are raised two feet above the level of the plain. They are formed of blocks of white and gray limestone gathered from the immediate neighbourhood. Around the larger graves are smaller ones looped on to their circumference indicative of successive additions to them, of less distinguished members of the family or tribes perhaps, unless they all perished in battle and were buried at the same time.

We endeavoured to raise the stones from the centre of one of these graves, but after descending about four feet and a half below the surface of it, they became so large and so locked in, that although we had three or four stout Sidis and a good crow-bar we could not move them, and had we succeeded; the chances are, from the hurried way in which we were obliged to make our examination, that we should have found little to have rewarded us for our pains.

Besides this Burial-Ground and the ruins mentioned, there were the remains of buldings in all directions about this cape, although there is not a human habitation now within ten miles of it. Hardly any of these

remains amount to more than the few stones which mark the area occupied by the original building.

The graves as well as the heaps of ruins at this cape were overgrown with the Moql tree, and its congener, the *Balsamodendron pubescens* described by Dr. Stocks, also the Miswak threads its way abundantly through the crevices of the boulders. In many places the trunks of the two former measured four or five inches in diameter, and their branches growing horizontally from their exposed position had extended completely over some of the larger graves. This shews that both trees and graves are very old.

At Damkôt, (lat. 16° 39' N., and long. 52° 52' E.) in the Bay of el Kammār, there is a very extensive Burial-Ground in which there are many ancient graves exactly like those at Ras Resût, and what is curious, is, that they are mixed up with the more modern ridges of the Mahomedan graves. The latter most probably commenced with the introduction of Mahomedanism, while the former were the graves of the old Pagans.

Damkôt is a very ancient looking place, it is a kind of sea-hollow so to speak, with mountainous scarps on all sides, except towards the sea. A narrow gorge leads up into the interior from behind it though which the Bedoins come to it. It must have been the port of barter or trade of the tribes of all this district from the beginning, for there is no other.

The above is extracted from notes taken during the late survey of the southeast coast of Arabia. I am almost certain that I saw the same kind of graves also at a place on this coast called Marbât, and on the top of Jibel Qarrah over the town of Makalla, where there is also an old Burial-Ground.

Lieutenant Cruttenden thus describes the same kind of graves in the Somali country. (Transactions of the Geographical Society of Bombay, Vol. VIII. Part 2, p. 207.)

"The graves found in the Somali country generally, and especially amongst the tribes of the Ahl Oor Sangeli, are remarkable for their neatness, being built of white slabs of limestone, almost marble, and surrounded by a circle of stones, the space within being neatly gravel-

led; but at Bunder Khor, in the Mijirtheyn territory, and in the neighbourhood of Berbera, very ancient graves are found consisting of heaps of stones, frequently seven to eight feet in height, and fifteen to eighteen feet in diameter at the base, hollowed in the centre, and with no head-stone; similiar in all respects to those described by Mr. Richardson in his "Travels in the Great Desert of the Sahara." They are, I fancy, relics of the Galla tribes, who once resided on the coast, but we could obtain no information respecting them."

Hence it would appear that this description of grave is to be found in every quarter of the old continent. C.

ART. III.—*Observations on the Grammatical Structure of the Vernacular languages of India.* By THE REV. DR. STEVENSON.

No. 3.

THE ADJECTIVE.

The Adjective is generally considered to be an essential part of language, as we require to have expressions for the qualities of things as well as names for the things themselves. Such qualities then as are obvious to the senses, as *black, white, straight, crooked, high, low*, and those which naturally suggest themselves to the mind from the consideration of the inherent properties of the persons and objects with which we come in contact, as *good, bad, useful, useless*, must have names in all languages. Accordingly, by all who have written on subjects of the Grammar of the Vernacular Indian tongues, Adjectives are allowed a place, except in the Carnatica Grammar referred to at the commencement of this series of papers. But no good reason can be given why करि (*kari*) *black*, should not be a word by itself, though it can be used in the form of करिदु (*karidu*), for a *black thing*. The word कृष्ण (*Krishna*), may be used before a noun in Sanscrit without any termination, if the writer pleases, but no one would say that then it was not an Adjective, meaning *black*, but the noun कृष्ण (*Krishna*),

which means a *black man*, deprived of its termination and used adjectively. In English we manage to get over the difficulty by prefixing an article, and the adjective black in the form of a *black* becomes a substantive; though even we admit that the latter is derived from the former. Be this as it may, in the Tamil, Malayalim and other southern languages, adjectives, as a general rule, have no declension except when they are used as nouns. And even when they have particles added to them, they do not vary these according to the gender and case of the nouns to which they are attached. The rule, in a word, is the same as in the Turkish, that adjectives have no declension. In the Sanscrit on the contrary, as is well known, adjectives as in Greek and Latin, agree with their substantives in gender, number and case.

Between the practice of the southern family and the Sanscrit in all of the northern family, except the Uriya which in this adopts the rule of the southern, a middle path is pursued. Adjectives ending in certain vowels only, agree in gender and number with their substantive in the nominative case. For all the rest of the cases they have one termination which does not vary. In Hindi, adjectives which are declinable have अ (á) in the nom. masculine, ई (i) in the nom. fem. and ए (e) in the oblique cases of the masculine, while the fem. keeps ई (i) throughout. No change takes place for number, so that these terminations serve for all oblique cases both in the singular and the plural. A similar rule holds good in the Bengálí, Gujarátí, Maráthí and Panjábí. In the Maráthi there is no change even for gender, ए (e) in the Provinces below the Ghauts, and या (ya) in those above them serving for all the oblique cases of three genders and two numbers. The same observations apply in a good measure to the Sindhí, though there the penultimate vowel varies occasionally for Number and gender. It is pretty evident then that the southern family of Indian languages follows a rule entirely different from the Sanscrit family of languages and agreeing with the Turkish, while the northern family through Bráhmanical influence has been partially and only partially conformed to the sacred dialect.

The comparison of adjectives is another important article in Comparative Grammar, where all the vernacular languages without one

single exception, desert the Sanscrit, and adhere to the Turkish model, which in this agrees with the Hebrew, and all that family of languages. The rule in all, is that no change should be made on the adjective for comparison, but that the simple adjective with the ablative case of the thing compared, should stand for the comparative degree, and the same with the words *above all* for the superlative; or else that particles corresponding to our words *very, excessive, &c.* should be joined to the adjective. In Yates' Bengali Grammar indeed the Sanscrit terminations तार (tara) and ताम (tama) are mentioned as being occasionally appended to adjectives; but this usage is confined to learned Bráhmans, and a few of their imitators, and cannot be said to form any part of the language of the people. With all the simplicity and want of grammatical involutions that characterize the English tongue, we have not laid aside the marks for the degrees of comparison. The vernacular dialects of India then, have in this respect less title to be classed in the Indo Germanic family than the language of a people inhabiting an island beyond the extreme point of the European continent.

NUMERALS.

The subject of Numerals has been generally considered a very important one, nevertheless the words and signs representative of Numbers do not fix themselves so deeply on the mind as those that relate to the common objects that meet the eye, and the most intimate relations of life. We find accordingly, that there is no analogy between the names of numerals in northern and southern India. Sanscrit words, and their corruptions alone are used in the languages of the north. Those of the south belong to their own peculiar family. Nevertheless *onnu* one, may be connected with the Latin *unus*, also *yerađu* two, with the Armenian *yergu* and *aru* six, with the Turkish *alti*. *Yettu* eight, also may be an exception to the general remark, and be allied not only to the Latin *octo* but to the Sanscrit *ashta*. Connected with the subject, however, a most important enquiry opens upon us. It is, where were the common numeral figures now so generally diffused through the world first invented and used? Europeans lay no claim

to the invention for themselves, but attribute it to the Saracens by whom this numeral system was first introduced into the European continent. The Arabians, however, call these cyphers Indian, and write them from left to right the same way as the Indians write though contrary to their own practice in other cases.

Almost all ancient nations used the letters of the Alphabet as signs for Numerals. This was the practice of the Greeks, of the Hebrews, of the ancient Arabs, &c. At first it was considered sufficient to use the first letter for 1, the second for 2, and so on to the end of the twenty-two or twenty-four letters of the alphabet. The inconvenience and imperfection of such a notation were soon felt, and the first ten letters were then used to mark the numbers to 10, the letter following was used for 20, the next for 30, and so on to 100. The letter that followed next, denoted 200, and so the system proceeded onwards to 1000. The ancient Greeks, Arabians and other ancient nations, west of India, never proceeded beyond this step, and even the Tamulians to this day use a system essentially the same. This too seems to be the system of the Gujarát copper-plates, a system which prevailed in India about the beginning of our era. In this system the grand defect is that the characters denoting 1 and 10 and 100, &c., are all different and hence arithmetic remains clogged with great unnecessary difficulties. The grand invention was the adoption of the present decimal notation in which one unit, one ten, and one hundred are represented by the same character, and the difference of value made to depend on the place which the figure occupies nearer to or further from the beginning of the series. It is a curious matter of enquiry to ascertain whence this system was first introduced, and in the oblivious absence of all testimony, the only clue to the discovery seems to be to ascertain where an alphabet containing these numerals at present exists. It is thus taken for granted that the Indian numerals like the ancient Greek, Hebrew, Arabian, &c. are letters and not mere arbitrary marks. This in itself is certainly probable, and the probability will amount to a moral certainty if we show that in the great mercantile marts on the Indus, these very characters serve both as letters and numerals to this very day, and that they are easily explainable

from a reference to the alphabet of the Scindians of Hyderabad and Shikarpore.

The Indian system was not like the Ancient Greek and Arab however, a mere arbitrary imposition of a numeral value to letters from the position they chanced to have in the alphabet, but the first consonant of the word expressing the name of the numeral was chosen and made the figure to denote it. In reference to one, three, four five, six, eight, and nine no practical difficulty occurred to occasion any variation from the plan. The cyphers accordingly marking all of these numbers in the North of India, except the first and the last, are most of them altogether indential with the Scindian letters and the others so nearly so as to show at a glance the connection. The resemblance between the first and last is not so striking, and had they stood alone might have been doubted altogether. In reference to the figure denoting seven, practical difficulty occurred. Its first letter corresponding to our *s* is so like the two figures that mark 1 and 5, that had it been adopted it would have been almost impossible to distinguish 7 from 15; the last consonant in this case has therefore been taken in its stead, and the cypher marking 7 is identical with the soft *t*, the ण of Devenagari. This *t* was not needed for three, as in the Scindian language the word for three is written in that Alphabet *tre* pronounced *tre* which in Scindian is written *tre* as will appear from the table. Another practical difficulty remained to be got over. The word for two is *ba* and for zero *budi*, both beginning with the letter *b*. In the Sanscrit from which indeed all are ultimately derived, this ambiguity does not exist, and the word for two, *dvi*, begins with *d* and the word corresponding to *budi* or zero, is *vindu* beginning with *v*. These then were adopted, and the likeness in these two cases of *d* and *v* to 2 and 0 is most striking; besides *duo*, the very same as the Latin word for two, is itself a Scindian word and used in particular relations for two, nor could a man of any learning hesitate for a moment in the substitution of so easy a word as विन्दु *vindu* when it served a useful purpose for the more common vernacular term. I think then, from the consideration of all the circumstances of the case,

that it is plain our cyphers had their origin on the Banks of the Indus, and that this notation which has had such an influence, not only on commercial arithmetic but also on the science of Astronomy itself, was invented in India, and carried by the Arabians westward and thus passed into Europe. It is true the cyphers of different nations vary considerably in form, but I believe the learned have long been agreed that they all derive their origin from one source and that source I think from the circumstance of the correspondence of the cyphers with the first consonant of their name in the Scindian alphabet, may without any great stretch be assumed to have had their origin at no very distant period on the Banks of the Indus; what that period was it may be difficult to discover, yet I think it could not be earlier than the fifth or sixth century of our era. The Scindian letters from which they are taken are all easily derivable from ancient forms of the Nágari, but they approach so near in many instances to the modern Gujarátí, that they cannot be very ancient. Had there been moreover any thing of the kind in ancient India, it could not have escaped the research of the Greek traders who had so much intercourse before the rise of Mahommedanism with Western India and thus have been by them communicated to us, but I am not in a position to trace back the use of cyphers so as to show either when they were first used in Arabia or India. For Europeans not much accustomed to the writing of eastern languages, it may be proper to remark, that the common Scindian writing like the Persian and Arabian is almost entirely destitute of marks for the vowels. When the vowel is initial, one character is used which stands for the whole class, and when it follows a consonant, there is usually no mark for it all. Those who write short-hand, will understand how any one can read such writing, others will hardly be able to comprehend how it can be legible. Still such is the fact, and it is evident, that it never would have answered in such a thing as the formation of a numeral notation, with no context for our guidance, to have taken the vowels into consideration. In the following table, there is first the Scindian name of the numeral, next the consonant from which the cypher is derived, next the Scindian numeral cypher, and in the

following columns the numeral cyphers of Northern India, Arabia and Europe respectively. In conclusion it is right to add that my own knowledge of the Scindian being purely elementary, I have followed closely Captain Stacks' Grammar and Dictionary of the language lately published by the Bombay Government.

The Scindian Numerals in words.	The Scindian letters from which the cyphers are derived.	The Scindian Numeral figures.	The North Indian Num- eral figures.	The South Indian Num- eral figures.	The Arabic Numeral fi- gures.	The European Numeral figures.
एको Eko,	ॐ	१	१, १	၁	1	1
दुओ Duo,	२, २	२	२, २	၂	2	2
ट्रिको Triko,	३	३	३	၃	3	3
चौको Chauko,	४	४	४	၄	4	4
पंजो Punjo,	५	५	५, ५	၅	5	5
छको Chhako,	६	६	६	၆	6	6
सवो Suto,	७	७	७, ७	၇	7	7
अठो Atho,	८	८	८, ८	၈	8	8
नोंओं Noo,	९	९	९, ९	၉	9	9
बिन्दु Bindu,	०	०	०	၀	0	0

ART. IV.—*Observations on Inscriptions on Copper-Plates dug up at Nerur in the Kúdál Division of the Sa'want Wa'ri State in April 1848.* by MAJOR LE-GRAND JACOB
(Communicated by the Government.)

These inscriptions are in what has been termed the cave character or the old Sanscrit, and are of the sixth and seventh centuries A. D. but they do not differ much from the Gírnar inscriptions of the 3d century B. C.—a table explanatory of, and showing the varieties in, these letters is annexed to the translations.

2. The plates all refer to the Chálukya or Chálikya race, the name is therein spelled both ways; the earliest recorded date, is S'aliváhana S'áka 627 A. D. 705—6, the Donor, Vijayáditya son of Vinayáditya; this plate has been numbered II, the earliest inscription appears to be that numbered I, describing a grant by Vijayábhattárika the beloved wife of Sríndrátiya elder brother of Vikramáditya, father of the above named Vinayáditya, and was therefore written three generations previously; whether Sríndrátiya, or as would appear the more correct name Srí Chandrádiya, * reigned previous to his younger brother, jointly with him, or not at all, is left in doubt, but from the title applied to him, and from the royal boon bestowed by his wife, one of the two first alternatives appears probable, hence as the era of Vikramáditya's ascension to the gádi has been shown by the Kánereſe inscriptions translated by Walter Elliot † to have been S'áka 514 A. D. 592—93, this plate must have been written about the close of the sixth century.

3. Vijayáditya's grant (No. II Plate) was made in the tenth year of his reign, thereby corroborating the era assigned for its commencement by Mr. Elliot, but the genealogy of this dynasty slightly differs

* Since completing these translations another set of plates has been found recording a grant by another wife of this same Prince whose name is written Sri Chandrádiya, the letter *Cha* seems therefore omitted by oversight in this plate. See Inscription No. VIII.

† Article, 1 July, 1836. Vol. IV. R. A. S. Journal.

from his in both these plates, which correspond one with the other as far as the eras reach. They both commence with Pulakes'i, and as they were evidently written when the grants were made, they would scarcely have omitted two whole generations between him and their own period; perhaps therefore the "Amara" and "Aditya Varma" of the comparatively modern Ye-ur Inscription, succeeding Satya,* were if existing at all, this sovereign's brother as Chandráditya was of Vikramáditya, or otherwise alias names, in after years taken for separate Rulers.

4. The genealogy and titles of the family as gathered from these two plates, are as follows:—

Ancestor of the race.

Háriti descended from Manu.

Srí Pulakesí Vallabha, Mahárájá.

Srí Kírtivarma Prithiví Vallabha, Mahárájá.

Satyás'raya Srí Prithiví Vallabha Mahárájá.

Adhirájá Parames'vara.

Sríndráditiya (or the name would more correctly appear to be Srí Chandráditya) Prithiví Vallabha Mahárájá. Vikramáditya Satyás'raya Srí Prithiví Vallabha Mahárájá Adhirájá Parames'vara Bhaṭṭāraka.

Vinayáditya Satyás'raya Srí Prithiví Vallabha, Mahárájá Adhirájá Parames'vara Bhaṭṭāraka.

Vijayáditya Satyás'raya Srí Prithiví Vallabha.

Mahárájá Adhirájá Parames'vara Bhaṭṭāraka

Vikramáditya.

2nd

5. The 3d set of plates names only two Rájás, Mangalá the Donor and his father Vallabha, of the Chálikya race, but whether of the same branch, or conquerors thereof, is left in doubt; the character appears of the same age as the others; perhaps this

* Throughout these plates written Satyás'raya, "Truth Asylum."

Mangalá, is Mangalisa, the son of Pulakes'i, also styled Vallabha, the first named of the dynasty, and if so, this inscription is older than No. I. set, by two generations—the only place in these grants that I can recognize, is that named in this plate Kundivádaka, probably the modern village of Kundé, not far from Nerúr, where the plates were exhumed.

6. The most interesting passage, is in No. II, where Vingáditya is described as having conquered the Ruler of Káncchi (Conjeveram) forced the Lords of the Islands Kumara, Párasika, and Sinhaha, to pay him tribute, and subdued all the Northern Countries as his Father Vikramáditya previously had the South. Can this dynasty have reached at the same time both Persia and Ceylon? Or what are these places? These words may also in the construction of the language imply the names of the Island Rulers, as well as of the so called Islands.

7. Being very imperfectly acquainted with Sanscrit, I should not have been able to master these inscriptions, nor have found time to devote to them, but for the aid rendered me by Váśudev Rámchandrí Shástrí, and an intelligent young Bráhmaṇ trained in the Elphinstone Institution by name Ananta Ballál.

8. I do not understand how Mounstuart Elphinstone whilst quoting Walter Elliot's researches, should have assigned the tenth century for the rise of the Chálikya dynasty, nor why Bál Gangadhar Shástrí, in his translation, or I should rather say Maráthí edition * of this history, omitted to rectify the mistake, since he had himself translated some inscriptions (published in the Vth. and VIIIth. Nos. of the B. R. A. S. Journal) whereby he had "verified the names of some of the early Kings of this race."

9. The system of Orthography used in representing Sanscrit in English letters has been that adopted by the Asiatic Society.

PLATES.

No. I. Be it peace. The prosperous race of the Chálukyas; the sons of Hárití, of the lineage of Manu, praised by the world; brought up

* Published 1846.

by the mothers ⁽¹⁾ of the seven nations ; who obtained choice blessings through the protection of Kártika ; who brought all kings under their allegiance, from the time of their obtaining the boar's signet through the grace of the Divine Naráyana—The great king Pulakesí Vallabha, the ornament of the race, purified himself by the sacrifice of a horse and consequent abluent rites. His great-grandson, the grandson of Kírttivarma (lord of the earth, the great king, who, having subjugated and forced his enemies to take refuge in forests, &c., firmly implanted his pure fame amongst them), the beloved son of Saytásraya (lord of the earth, king of kings, ambitious of supremacy, devoted to war, to whom all kings paid homage, and who gained by the defeat of S'ri Harshavarddhan, famous in the Northern countries, the name of Parameshvara) is the unconquerable ⁽²⁾ Vikramáditya. His elder brother S'rindráditya, lord of the earth, the great king, whose beloved wife, Vijayabhattachárika, the anointed Queen in the year Pardhomas ⁽³⁾ of her family's reign, on the autumnal equinox, the 2d day of the waning moon of A'svin, (September and October) for the attainment of the virtue of a deed done on this day, bestowed along with water, the privilege of supervision (i. e. benefice) of the eight markets Poliyamapatha, Adigirika, &c., in (Narakágár), on A'ryaswámí—Dikshit (a sacrificer) grandson of *Grihapati*, a descendant of Vatsa, and son of ⁽⁴⁾. The Donor says "he, who will continue this privilege to be enjoyed by the future generations of this person, will be like the donor, an enjoyer of virtue ; while on the other hand, whosoever may deprive him of it will be guilty of the five capital crimes—The same is even prescribed by the omniscient Vyása, who says "whosoever resumes what is given by himself or others shall be doomed to pass sixty thousand years in hell."

No. II. May it be well. Glory be to the boar-like body ⁽⁵⁾ in whom *Vishnu* was made manifest, who agitated the ocean, and on the tip of

(1) The seven divine powers typified by female Deities. (2) A few words before this are illegible. (3) The letters are plain but the signification unknown. (4) Name is illegible. (5) The third incarnation of Vishnu, for the recovery of the earth from the waters.

whose right, erect tusk rested the world. The prosperous race of the Chálikyas ⁽¹⁾, sprung from the universally praised lineage of *Manu*; the sons of Hárítí, brought up even by the seven nations' mothers (i. e. by the seven female deities, Bráhmí, Mahes'varí, &c., or by seven mothers like Lakshmi); who obtained a succession of blessings through the protection of Kárttikaswámi ⁽²⁾; who brought all the kings under their allegiance from the time of their obtaining the boar signet through the grace of the Divine Naráyana. This race was ornamented by the great king Pulakes'í Vallabha who purified himself by the sacrifice of a horse, and consequent ablution rites. His son, the great king Kirttivarma, lord of the earth, having subdued and forced all his enemies to take refuge in forests, &c., firmly implanted his pure fame amongst them. His son *Satyás'raya* ⁽³⁾ lord of the earth, and king of kings, much devoted to war, and to whom all kings paid homage, gained by the defeat of S'rí *Harshavarddhan*, hero of the northern countries, the name of Parames'vara ⁽⁴⁾. His beloved son Vikramáditya, father of intelligent sons, lord of the earth, and king of kings, desirous of supremacy, supported by a harmonious brotherhood, whose lotus-like feet were kissed by the crown of the despotic king of Kánc'hí ⁽⁵⁾ subdued all his rivals on one horse alone, the excellent Chitra-Kandha, ⁽⁶⁾. His beloved son Vinayáditya, lord of the earth, and king of kings, desirous of supremacy, disabled as Tárakáráti (i. e. Skanda) did the Daityas the insolent forces or *Dhuerajya* king of Kánc'hí; he made the rulers of the Islands, Kumera, Páras'ika, Sinhaha, &c., pay him tribute and gradually acquired the full symbol of supremacy, (Pádídhvaja, &c.) by the overthrow of the kings of the northern countries. His beloved son Vijayáditya, lord of the earth, and king of kings, desirous of supremacy, attained even in his childhood, the whole science of rendering weapons efficacious by charms. His grand-father (Vikramáditya) had conquered the kings of the South,

(1) In this and all the plates save Nos. 1, & 4, the word is written Chálikyn. (2) The son of Mahádeva and Commander in Chief of the Celestial forces. (3) Literally, 'Truth-Asylum.' (4) The kings succeeding *Satyás'raya* henceforth bear in the plate, both his name and the new title acquired by him in addition to their own. (5) A few words before this are unintelligible. (6) Literally means many colored neck.

but he exterminated all of them who were inimical to him, and after the death in battle, of his father (Vinayáditya) who made conquest of the northern countries, he, moving about at will, got his scymitars' edge blunted by the slaughter of his enemies' numerous elephants. He, foremost in battle ⁽¹⁾ ardent in noble enterprises, made all his enemies subject to him ⁽²⁾. No sooner did he hear of anarchy than he left his house, like Vatsarájá (i. e. Udayana of the solar race) relying on his own power, removed this source of misery in the country, and the excess of every vice, which had arisen from the oppression of Bráhmans, a royal calamity; giving protection to all his subjects by the strength of his arms. He is arbitrary, at all times possessed of the three royal attributes (i. e. Bravery, Policy, and Energy). He humbled the pride of his enemies, but he himself cannot be mastered. He is spotless, and for all this is become all the world's support. His dominions, adorned by all the symbols of supremacy (Pádídhvaja &c.) are extensive. He commands thus. "Be it known to you that we, in S'ák'a 627, the tenth current year, *Pravarddhamán* of Vinayáditya's, reign, at the request of *Dupendra* ⁽³⁾, granted Kumára ⁽⁴⁾, in the country *Mahásaptami* ⁽⁵⁾, to the best and amiable Bráhmans, inhabitants of the village of Hikudhamba ⁽⁶⁾, who have penetrated through, the Vedas and their branches. We mention their names and lineage—viz. Deva Swámí, a descendant of Bháradwája, Karka Swámí, a descendant of Kausíka, Yadam Swámí, a descendant of Bháradája Swámí ⁽⁷⁾, a descendant of Kaundinya; Deva Swámí, a descendant of Maudgalya; Gargga Swámí, a descendant of A'treya; Rudra Swámí a descendant of Kás'yapa; and Rasuvarman, a descendant of Vatsa. Knowing that life and wealth are transient, as glittering sunbeams, our successors or other kings, who may thirst for fame, enduring as long as the world, the moon, and the sun exist, should protect this grant as their own child. It is prescribed by the omnis-

(1) The words also imply first in beauty. (2) Some words being entirely effaced, the connexion is here broken. (3) One letter preceding *Dupendra* is illegible. (4) Four letters following Kumára are illegible. (5) Two letters here are doubtful. (6) Three letters preceding Hikudhamba are illegible. (7) Three letters preceding Swámí are unintelligible.

cient Vyása too, that many kings, Sagara and others have enjoyed the earth; to whomsoever the earth belongs; to him belongs the fruit thereof. It is easy for the great to grant wealth once, but it is difficult to preserve what others have given, therefore the latter is a more meritorious act than the former. He who resumes what is given either by himself or others, stays sixty thousand years as a worm in hell." The unblemished Punga Vallabha, most prudent in suggesting the time of peace and war wrote this edict.

No. III. May it be well. The king Vallabha, belonging to the wealthy Chalikyū race, the offspring of Hāritī, descended from the children of Manu and constantly meditating on the feet of Swāmi Mahāsena (i. e. Kārtikeya), well versed in the institutes of Manu, the Purānas, Rāmāyana Mahābhārata, and ancient history; Vṛhaspati in Ethics, purified himself by the ablutions made after the Agnishtoma, Wājapeya, Paundarika, and costly As'vamedha (a sacrifice of a horse) sacrifices, and rendered himself popular by his qualities. His son Maṅgala Rājā is most attached to the Brāhmins, a subduer of other's territories, equitable in his own dominions and devoted to the worship of God (the gods) Brāhmins and his preceptor. His pure fame pervades the world. He, by his personal prowess, made other kings submissive and obtained tribute from them. His gait, sight, and voice are like those of a bull. He is uncontrollable as a lustful and high mettled elephant, brave as a lion, full of justice, humility, charity, mercy, modesty, and truth; possessed of three attributes (i. e. Bravery, Policy, and Energy); most pious, inimitable in good qualities, by the lustre of whose virtues the darkness of opprobrium is repelled. This illustrious king expelled Shaṅkaragan's son Budha Rājā, strong in elephants, horses, infantry, and treasure. He slew Swāmi Rājā, a descendant of the Chālikiya race, who had been victorious in eighteen battles. After this, the king, fasting on the most hallowed day in the year, the 12th day of (the waxing moon) Kārtika, and worshipping Vishnu, spiritual mindedly granted with water, (1) Kundivādaka

(1) A ceremony observed previous to any donation, intimating the entire relinquishment of right over the thing given.

a village in the Koñkan, to Priyaswámí, descended from a respectable family, versed in the Vedas and their parts, good-tempered, well-beloved, the son of Sumati Swámí who understood the Vedas and their parts and was descended from Káśyapa. Mañgala Rája said "any one either of my or other's family that may angrily, or maliciously or avariciously or foolishly withdraw the grant, will be guilty of the five capital (²) and also minor crimes." It is not he only that says so but even the Dharma S'ástra prescribes the same. Many kings, Sagara and others possessed the land. All rulers reap the fruits of their acts. Any one who takes back the land given by himself or others, stays as a worm sixty thousand years in hell. The land donor remains sixty thousand years in heaven; on the contrary, the depriver and his abettor dwell the same number of years in hell. It is easy for the great to grant wealth but it is difficult to preserve what others have given. Granting and preserving are both virtuous deeds, but the latter is more so than the former.

No. IV, is entire, having three Plates, like the others, in the set. There is no S'áka found in it. This Plate is very badly written and abounds in numerous graphical errors. Vijayáditya is the donor, but he gives it in his son's name.

No. V, has lost its third leaf. Its first leaf is greatly corroded. The few words that are legible from Swasti to Varttamáne, are a repetition of a part of Plate No. II followed by Rásavanagare, the last word. The donor is Vijayáditya—the grant is conferred in S'áka 622 in the 5th year of his reign.

No. VI, has two leaves, almost eaten away, the middle one wanting. The few words decipherable convey no meaning.

No. VII, is the upper part of one leaf. It contains the final S'lokas of the other Plates.

(1) 1st Slaughter of a Bráhman, 2d Drinking of wine, 3d Stealth of gold, 4th Incest with father's or Guru's wife; and 5th Drinking and eating with the perpetrator of any of these crimes.

No. VIII. The "Kochré Inscription" * translated as literally as consistent with the sense in English.

May it be well. The prosperous race of the Chálukyas; the sons of Hárítí, of the lineage of Manu, praised by the world; brought up by the mothers of the seven nations; who obtained a succession of blessings through the protection of Kártika; who brought all kings under their allegiance from the time of their obtaining the boar's signet through the grace of the Divine Naráyana. The great king Pula-keśivallabha the ornament of the race, purified himself by the sacrifice of a horse and consequent ablution rites. His great-grandson, the grandson of Kírttivarma (lord of the earth, the great king, who, having subjugated and forced his enemies to take refuge in forests &c., firmly implanted his pure fame amongst them) the beloved son of Satyásraya (lord of the earth, king of kings, devoted to war, to whom all kings paid homage and who gained by the defeat of Sri Harshavardhan lord of the northern Countries, the name of Parames'vara) is Vikramáditya. He having subdued all the hostile kings of every quarter and inherited his family's property (throne &c.) rendered himself invincible by his paramount power. His elder brother was Chandráditya, lord of the earth and king of kings, whose beloved wife, Vijīṣayamahádevī (1) the anointed Queen, an enemy to the Kaliyug, thus publicly ordains "Be it known to you that on the 12th day of the waxing moon of (April and May) I, having fasted, bestowed along with water the Thikan Vakulakachcha, together with a salt marsh in Kochuraku village (modern Kochré) on Golaswámī (2) a descendent of Wutsu. Any one, either (3) of our or other's family, who will preserve the grant, will be an enjoyer of virtue; while on the other hand, he, who will resume it, will be guilty of the five capital crimes. The land Donor enjoys heaven for sixty thousand years; while on the contrary, the resumer, and the one who approves of the resumption are doomed to pass the same number of

* See the note to 2nd para. of Preparatory Observations. (1) Four following letters are unintelligible. (2) Four letters preceding the name are unintelligible. (3) A few letters before this are plain but their signification is unknown.

years in hell. Whosoever resumes land, given by himself or others, stays sixty thousand years as a worm in hell. (1) *

G. L. JACOB.

15th Nov. 1848.

(1) The final 10 letters are unintelligible.

* NOTE.—May we suppose that this K'irtti Varma is the same as the king at whose court the allegorical drama called the Prabodha Chandrodāya was represented? A Kirtti Varma is celebrated both in the drama, and on the copper plates as a conqueror; in the former he is said to be "a sovereign of the race of the moon," and it is well known that the Chālu-kiyas were a lunar dynasty. In both instances the monarch's extensive Empire is celebrated. "The earth encompassed by the ocean is subjected to his authority, and he receives the homage of its kings." "Gopāla whose glory fills the universe, who aided by his sword as his friend, conquered the lords of men, and has invested with the sovereignty of the earth Kirtti Varma, the chief of Princes. . . . now he has entered the road of peace, (Prabodha Chandrodāya, Prologue)." With this compare Journal of Royal Asiatic Society, No. VI. p. 268. "From him (Palakes'i) arose Kirtti Varma Rājā superior to Rājā Nala, destroyer of the Rājās of the Maurya, and Kadambo dynasties who first caused the land to become well inhabited." This is from an inscription of the Chāluikiya, called by mistake the Chāmushya dynasty. See also No. VII, and X. p. 346. Vishnu in his boar incarnation is the chief object of worship both according to the plates, and the drama, and the language in which he is eulogized is in both instances the same inflated, artificial style which is common on plate inscriptions.

The frequent references to the *boar* standard and the use of a *boar* signet on the plates of the Valabhi and Chālukya dynasties remind us of our Anglo-Saxon ancestors. Tacitus says of the Æstyī that, in imitation of the Suevish custom "*Matrem deūm venerantur, insigne superstitionis, formas aprorum gestant. Id pro armis omnium que tutela; securum deæ cultorem etiam inter hostes præstat.*" The Anglo-Saxon poems consider a boar's form or figure so essential a portion of the helmet, that they use the word "*sofore*" *aper*, for that part of the armour. "He commanded them to bring in the *boar* (i. e. helmet) the ornament of the head, the helmet lofty in battle." *Beowulf* l. 1299. And still more closely with reference to the virtues of this sign ;"

"The forms of *boars* they seemed
above their cheeks to bear
adorned with gold,

various and hardened in the fire
it held the guard of life."

And again

"But the white helmet
guarded the head,
* * * *
adorned with treasure
set about with lordly signs,
as it in days of yore

the armourer made,
wondrously produced,
set it about with shapes of *boars*,
that afterwards neither
brand nor war-knife
might penetrate it."

This sign, Grimm connects with Freā who was similar to Vishnu in his amorous propensities and was worshipped with the *lingum* or phallus. See "the Saxons in England" by Kemble.

P. A.

Set of Plates N^o I.

ಪುಷ್ಪಿತ್ರಿಶಂಖಕುಲವಸಂಸ್ಥಾಪಕವಿರಚಯ
ಕರ್ತವ್ಯದಿಗಿಪ್ರಗ್ರಂಥಪುಷ್ಪಕವಿರಚಯ
○ ಶರೀರವಶಿಸ್ತುಪದಿಶವಶವಶವಶವಶ
ವಶವಶವಶವಶವಶವಶವಶವಶವಶವಶ
ವಶವಶವಶವಶವಶವಶವಶವಶವಶವಶ
ವಶವಶವಶವಶವಶವಶವಶವಶವಶವಶ

၂၅ - - - - - ၁၃၁၆၇၈၉၁၀၁၁၂၁၃
 ၁၄၁၅၁၆၁၇၁၈၁၉၂၀၂၁၂၂၂၃
 ၂၄၂၅၂၆၂၇၂၈၂၉၃၀၃၁၃၂၃၃
 ၃၄၃၅၃၆၃၇၃၈၃၉၄၀၄၁၄၂၄၃
 ၄၄၄၅၄၆၄၇၄၈၄၉၅၀၅၁၅၂၅၃
 ၅၄၅၅၅၆၅၇၅၈၅၉၆၀၆၁၆၂၆၃
 ၆၄၆၅၆၆၆၇၆၈၆၉၇၀၇၁၇၂၇၃
 ၇၄၇၅၇၆၇၇၇၈၇၉၈၀၈၁၈၂၈၃
 ၈၄၈၅၈၆၈၇၈၈၈၉၉၀၉၁၉၂၉၃
 ၉၄၉၅၉၆၉၇၉၈၉၉၁၀၁၀၂၁၀၃

Transcript of N^o. 1 in Modern Nagri.

स्वस्ति श्रीमतां सकल भुवन संस्तूयमान मानव्य स
गोत्राणां हारिणि पुत्राणां सप्तलोक मातृ स्सप्तमातृभिरभि
रक्षितानां क्लृप्तिकेच परिरक्षण प्राप्त कन्याण पराणां
भगवन्तारायण प्रसाद समासादित वराह लाञ्छने क्षणक्ष
ण वशीकृता शेष मही भूतां च लुक्क्यानां कुल मलङ्कुरिण्योरश्वमे
धाय भृथ स्नान पवित्री कृत गात्रस्य श्रीपुलके शिवल्लभ महाराज
स्य प्रपौत्रः पराङ्ग क्लान्तवन वा स्यादि पर नृपति मण्डल प्रणिबद्ध
विशुद्ध कीर्त्ति श्रीकीर्त्ति वर्म पृथिवीवल्लभ महाराजस्य पौत्र स्समा
रं संसक्त सकलो तरा पृथे श्वर श्रीहर्ष वर्धन पराजयो पलव्य
परमेश्वरा परनाम धेयस्य सत्याश्रय श्री पृथिवीवल्ल
भ महाराजाधिराज परमेश्वर भट्टारकस्य प्रियतनयो
राज रिपु नरेन्द्र हन्ता दिशिजि - - - - -
प्राप्य - - - - - नमनिवारित विक्रमादित्य नस्य ज्येष्ठ
भ्रातुः श्रीन्द्रादित्य प्रथिवीवल्लभ महाराजस्य प्रियमहि
षीभिजय भट्टारिका स्व राज्य पर्थेन स्संवत्सर आश्व
युज्येर्मासस्य द्वितीयायाम् विषुवे बहुपुण्यार्थम्
नरकागाहरे वत्स सगोत्राय गृहपते पौत्राय स्वाभिन्व
रैवि - - - स्वपुत्राय आर्घ्य स्वामिदि क्षिप्ताय पोलियम
पथादि गिरिका प्रभृति दक्षिणोपरि श्वष्ट्रादे क्षिका उदकपू
र्वं दत्ताः नस्य बहु जेष्ठनिर्दिशेषं परिपालयति - - स
दातुः पुण्यफल भागभवति योस्य - - - - - स
पंचभिर्महापातकैस्संयुक्तो भवति उक्तं च भगवता व्या
सेन स्वदत्तां परदत्तां वा यो हरे तव सुन्धरां पष्टिवर्ष
सहस्राणि विष्टायां जायते रुमिः

[illegible]

පුළුල් කළ කලාපයේ පැවැත්මට
 ප්‍රධාන වශයෙන්ම දායක වන්නේ
 ප්‍රජාතන්ත්‍රවාදයයි. ප්‍රජාතන්ත්‍රවාදය
 යනු ජනතාවගේ සහභාගීත්වය
 සහ සහයෝගය මත පදනම් වූ
 ප්‍රතිපත්ති සහ ක්‍රියාමාර්ග
 වලට අදාළ වන්නේය. ප්‍රජාතන්ත්‍රවාදය
 යනු ජනතාවගේ සහභාගීත්වය
 සහ සහයෝගය මත පදනම් වූ
 ප්‍රතිපත්ති සහ ක්‍රියාමාර්ග
 වලට අදාළ වන්නේය.

[illegible]

[illegible]

28 Feb 1943

स्वस्ति . जयत्वा विष्णु तं विष्णो र्वा राहं क्षोभितार्णवं . दक्षिणोन्नतदंष्ट्रा प्रविश्रान्तभुव
 वपुः श्रीमतां सकल भुवन संस्तूयमान मानव्यसगोत्राणां हारिणी पुत्राणां . सप्त
 लोकमातृभिस्सप्तमातृभिरभिवर्द्धितानां . कार्तिकेयपरिरक्षणप्राप्तकल्याणप
 रंपराणां . भगवन्मारायणप्रसादसमासादितवराहलाञ्छनेक्षणक्षणवशी
 कृताशेषमहीभृतां . च लिङ्गानां कुलमलंकरिणोरश्वमेधावभृथस्नानपवित्रीकृत
 त्रस्य . श्रीपुलकेशिवल्लभमहाराजस्यसूनुः पराक्रमाक्रान्तवनवास्यादिप
 रनृपतिमण्डलप्रणिबद्धविशुद्धकीर्तिः श्रीकीर्तिवर्म्मपृथिवीवल्लभमहाराजस्त
 स्यात्मजस्समरसेसक्तसकलोत्तरापथेश्वरश्रीहर्षवर्धनपराजयोपात्तप
 रमेश्वरशब्दस्य . सत्याश्रयश्रीपृथिवीवल्लभमहाराजाधिराजपरमेश्वरस्य
 प्राप्ततनयस्यमुसौभ्रात्रसहायस्य . चित्रकन्धाभिधानप्रवरतुरङ्गमेणैकेनैव
 वारिताशेषविजिगीषोरवनिपतित्रिनयानृवितास्वगुरोश्रीयमात्मपाद

स्थप्रभावकुलिशदालितपाण्ड्यन्यो - - - - - विभ्रमस्यानन्यव
 नतकाञ्चीपतिमुकुटचुंबितपादांबुजस्य . विक्रमादित्यसत्याश्रयश्रीपृथिवीव
 ल्लभमहाराजाधिराजपरमेश्वरभट्टारकस्य . प्रियसूनोः पितुराज्ञा - - - विन्दु
 शेखरस्य . तारकारातिरिचदैत्यबलमति समुद्ध - न्धैराज्यकाञ्चीपतिवल्लभव
 पृथ्व . करदीकृतकमेरपारसीकसिंहहादिद्वीपाधिपस्य . सकलोत्तरापथना
 थमथनेपार्ज्जिनाज्जितपाटिध्वजादिसमस्तपारमेश्वर्य्यचिन्हस्य . विनयादि
 त्यसत्याश्रयश्रीपृथिवीवल्लभमहाराजाधिराजपरमेश्वरभट्टारकस्य . त्रियात्मजश्री
 शच एवाधिगताशेषास्त्रशास्त्रो . दक्षिणाशाविजयिनिपितामहेसमुन्मूलितनिरि
 लकण्टकसंहतिरुत्तरापथविजिगीषोरुगुरोरग्रत आनधाहं व्याहारमान्वरन्
 रातिगजघटापादनविशीर्य्यमाणरुपागधारस्सप्तग्रविग्रहाग्रेसरस्त
 त्साहसरसिकः परात्मनीकृतशत्रुमण्डलो . गंगायमुनापाटिध्वजपदम
 - - - - -

कामाग्निक्रमतागजादिपितृसात्कुर्वन्परैः ॥ पलायमानैरासाद्यकथमपि वि-
 धिग्रशादुपेतविप्रतापादेवविषयप्रकोपमराजकमुत्सारयन्वत्सराज
 इवानपेक्षितापरसाहाय्यकस्तेदेवावग्रहाग्निर्गत्यस्वभुजावष्टम्भप्रसवि
 ताशेषविश्वंभरः प्रभुरखण्डितशक्तित्रयत्वाच्छत्रुमदभंजनत्वादधरित्वान्निरव
 द्यत्वाद्यः समस्तभुवनाश्रयस्तकलपारमैश्वर्य्यव्यक्तिहेतुपादिविजयाद्यु
 ज्वलत्त्राज्यराज्या विजयादित्यसत्याश्रयश्रीपृथिवीवल्लभमहाराजाधिराज
 परमेश्वरभट्टारकस्सर्धानैवमाज्ञापयतिविदितमस्तुबोस्माभिस्सप्तविंशल्युत्तरष
 ट्, तेषुशक्रवर्षेष्वितीतेषुप्रवर्धमानविजयराज्यसंवत्सरेदशमेवर्त्तमाने

— दुपेन्द्रविज्ञापनया महामहामिहविदिता विषयेकुमार — — रागामो

— — हिकुटुम्बनामग्रामवेदवेदोगपारंगेभ्योग्रेष्टब्राह्मणेभ्योदत्तः
 एतेषान्नामगोत्राण्युच्यन्ते. भारद्वाजसगोत्रदेवस्वामिकौशिकसगो

न कर्क स्वाभि भारद्वाज स गोत्र यज्ञ स्वाभि कौण्डिन्य स गोत्र - - म्म स्वाभि मोद्रल्य
 स गोत्र देव स्वाभि आत्रेय स गोत्र गर्ग स्वाभि काश्यप स गोत्र रुद्र स्वाभि दत्त स स
 गोत्र रास वर्म्मणोदत्तः - - आगाभिभि रस्मद् श्यैरन्यैश्च राजभिरायुरैश्च व्यादीनां
 विलसितमचिरांश्च - - च्चलमवगच्छन् यराचन्द्रार्कवराणव स्थितिसमकालं
 यशश्चिषुभिस्त्पुत्रनिर्व्विशेषमुक्तं च भगवता वेदव्यासेन व्यासेन . बुद्भि
 र्व्यसुधाभुक्त्ताराजभिस्सगरादिभिः यस्य यस्य यदाभूमिस्तस्य तस्य
 तदाफलं . स्वन्दानुंसुमहच्छक्यंदुखमन्यस्य पालनं . दानं चापालनं वेति दाना
 च्छ्रेयोदुपालनं . स्वदत्तां परदत्तां वा यो हरेत वसुन्धरां . षष्टिधर्मसहस्राणि
 विद्यायां जायते कृमिः महासान्धिविग्रहिक निरद्य पुण्य वल्लभेन लिखितमि
 दं शासनमिति .

[illegible]

ॐ नमो भगवते वासुदेवाय ॥
 अथ श्रीकृष्णार्जुनसंवा
 दः ॥ १ ॥ अर्जुन उवाच ॥
 दृष्ट्वा तु पाण्डुपुत्रो पाण्डु-
 वीर्यवान्महामुनिपुत्र-
 ॐ नमो भगवते वासुदेवाय ॥

ವಿಜ್ಞಾನೇಶ್ವರನು ತನ್ನ ಶಿಷ್ಯರಾದ ಸಿದ್ಧಿಗೌಡನಿಗೆ ಹೇಳುತ್ತಿದ್ದನು
ನೀನು: ತನ್ನ ಶಿಷ್ಯರಾದ ಬಹುಮುಖವಾದವನಾದವನು
ಶಿಷ್ಯನಾದವನು ತನ್ನ ಶಿಷ್ಯನಾದವನು: ೧೬
ತನ್ನ ಶಿಷ್ಯನಾದವನು ತನ್ನ ಶಿಷ್ಯನಾದವನು
ತನ್ನ ಶಿಷ್ಯನಾದವನು ೧೬ ತನ್ನ ಶಿಷ್ಯನಾದವನು
ತನ್ನ ಶಿಷ್ಯನಾದವನು ೧೬ ತನ್ನ ಶಿಷ್ಯನಾದವನು
ತನ್ನ ಶಿಷ್ಯನಾದವನು ೧೬ ತನ್ನ ಶಿಷ್ಯನಾದವನು;

Transcript of N^o III. in Modern Nagari

स्वस्ति . श्रीमतां स्वाभिमहासेन पादानु ध्यातानां . मानव्यसगो
 त्राणां . हारिति पुत्राणां च लिख्यानां . वंशैस्तंभूतः मानवपु
 राण रामायण भारतेति हासकुशलः नीलो बृहस्पति समः
 अग्निष्टोमवाजपेय पौण्डरीक बहु सुवर्णाश्वमेधा वभृथ
 स्नान पवित्री कृतशरीरः स्वगुणैर्लोक बलुभो बलुभः तस्य पु
 त्रः परम ब्रह्मण्यः परराष्ट्रावमर्ही स्वराष्ट्रे न्यायानुवर्त्ती देव द्विज
 गुरु पूजानिरतः सकल मही मण्डल व्यापि विमलयशाः
 स्वभुजबल पराक्रु मोपार्जिता न्यराजवित्तः वृषभगमननयननिना
 दः समदवर वारण विलासः सिंह विक्रमः नयविनय दान दया
 दाक्षिण्य सत्य संपदोपेतः शक्ति त्रय संपन्नः परम भागवतः
 मङ्गलराजः बभौ सत्वेन्य प्रतिमान किर्त्तिस्तम ॐ प्रमृन्दन्स्व
 गुणां शुजालैः तेन राजाशंकर गण पुत्रं गज तुरग पदाति
 कोशबल संपन्नं बुद्ध राजं विद्राव्य चाति स्ववंश संभवं अष्टा
 दश समर विजयिनं स्वाभिराजं च हत्वा संवत्सर पूजयन् मायां
 कार्त्तिक द्वादश्यां कृतोपवासेनाञ्जित पिष्णुना काश्यप गोत्रस्य वेद
 वेदाङ्ग विदुषः सुमति स्वाभिनः पुत्राय वेद वेदाङ्ग पारगायः
 प्रिय स्वाभिने कुल शील वृत्त संपन्ना यको कण बिषयेभिः श्रे
 यसमुदक पूर्व कुण्डि वादक ग्रामोदत्तः उक्तं च तेन राजा
 योस्मत्कुलाभ्यन्तरोन्यो धारागद्देप लोभमोहाभिभूतो हि स्यात्
 स पञ्च महापातकोपपातकैस्संयुक्तः स्यात् धर्म शब्दे स्वपुक्तं
 बहुगिर्वसुधाभुक्ता राजभिस्सगरादिभिः यस्य वस्य यदा
 भूमिः तस्य तस्य तदा फलम् स्वदत्तां परदत्तां वा यो हरेत वसु
 धं राक्षसि वर्ष सहस्राणि पिष्टायां जायते क्रिमिः यष्टि
 वर्ष सहस्राणि स्वर्गेतिष्ठति भूमिदः आच्छेत्ता चानुमन्ता
 च तान्ये वनरके वसेत् ॥ स्वन्दानुसुमहच्छक्यम् दुःख
 यन्मायापन्नं जगन्मायापन्नं वेति जगन्तेजो जगन्मिति .

No VIII. The Kochré Inscription.*

[illegible]

ਪ੍ਰਧਾਨ: ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ
 ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ
 ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ
 ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ
 ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ ਪਾਤ੍ਰ

ਸਿਖਿੰਦੁ ਸ੍ਰਮੁਦਫੁਲੈ ਪਛੈ ਚਾਉ ਚਮਾ ਪ੍ਰਸੂਤਮ
ਗੁਰਮਿਤਿ ਕੁਪਾਇ ਗ੍ਰਮੁਦੁ ਭੈ ਸੋਗੀ ਨੀਉ ਚਕੁੰਦੁ
ਪ੍ਰਿਥਿਕਿ ਭ੍ਰਮ ਪੁਰਾਨੈ ਹੋਗੁ ਬ੍ਰਹਮੁਦੁ ਚਮੁਕੁੰਦੁ
ਜਿ ਕਠੋ ਪਦਮਿ ਬਿਭੂ ਨੀਉ ਮਿਦੁ ਚਮੁਕੁੰਦੁ
ਪ੍ਰਿਥਿਕਿ ਭ੍ਰਮੁਦੁ ਭਾਛੈ ਚਮੁਕੁੰਦੁ ਨੀਉ ਮਿਦੁ ਚਮੁਕੁੰਦੁ
ਚਮੁਕੁੰਦੁ ਭ੍ਰਮੁਦੁ ਚਮੁਕੁੰਦੁ ਚਮੁਕੁੰਦੁ ਚਮੁਕੁੰਦੁ
ਚਮੁਕੁੰਦੁ ਭ੍ਰਮੁਦੁ ਚਮੁਕੁੰਦੁ ਚਮੁਕੁੰਦੁ ਚਮੁਕੁੰਦੁ

ಕೆ. ಅಗ್ರಕಾ ಉದ್ವಿಜ್ಞಾನಕೀರ್ತಕ ಪುಷ್ಪಕುಣ್ಣಂ ೮೫ ಪಾಠ್ಯ
ಕ್ಷೇಮತುಳಾಸಿದಾ ಪ್ರಾಣೇಯಾಪ್ತದ್ವೇಷಾತ್ಪ್ರದಾಕುಪಾಠ
ಖನಿತವ್ಯಭ್ರಾತಾಕ್ಷುಷ್ಣಂ ಉಪವಾಸೇತವ್ಯಪ್ರಾಪ್ತಾ
ತಸ್ಯವ್ಯಕ್ತೇತಸ್ಯ ನೆ ಪದ್ವಿಪಾಪವಾಸ್ಯಾ ಬಿಸ್ಕುಣ್ಣ
ಉಪನಿತ್ಯುಪ್ಪಿತ ಪುಷ್ಪಕುಪಾಕ್ಷುಷ್ಣಾ ಪ್ರಾಣೇಶ್ವರಪ್ರತಿಷ್ಠ
ಮಾಪ್ತುರಕ್ಷಾಪಾಪಕ್ಷಾಪಾಪಾಪೇನದಮ್ಯಾಕ್ಷುಷ್ಣಾಪದ್ವಿಪಾಪ
ತವ್ಯಾಪಾಪಿವಿಷ್ಣುಪಾಪೇತವ್ಯಕ್ತೇಶ್ವರಪ್ರಾಪ್ತನಿಷ್ಕೇಶ್ವರ

७ स्वस्ति श्रीमतो सकल भुवच संस्तूयमान मानव्य
स गोत्राणां हारी ती पुत्राणां सप्त लोक मात्रिभि स्सप्त
मातृभिराभि बर्हिनां कान्तिकेय परिरक्षण प्राप्त कल्पा
ण परं पराणां भगवन्ना रायण प्रसाद समासा
दित वराह लाञ्छने क्षणक्षण वशी कृताशेष महीभृता
चलु क्यानां कुलमलङ्कारिष्णो रश्वमेधावभृथस्मान पवित्री
कृत गात्रस्य श्रीपुलकेशिवल्लभ महाराज
स्य प्रपौत्रः पंराक्रमाक्रांत वनवास्यादि पर नृपति मण्ड
ल प्रणि बद्धविशुद्ध कीर्ति श्री कीर्तिवर्मप्रियिविवल्लभ महा
राजस्य पौत्रस्य मर संसक्त खकलोत्तरापथेश्वर श्रीहर्ष
वर्द्धन पराजयो पलब्ध परमेश्वरा परनामधे
यस्य सत्याश्रय श्रीप्रिथिवीवल्लभ महाराजाधिराज
परमेश्वरस्य प्रियतनय रणशिरसिरि पुनरेन्नान्दि

शिदिशिजित्वास्वचङ् शजालक्ष्मीं प्राण्यन् परमे श्वरतया
 निवारित विक्रमादित्यस्तस्य ज्येष्ठो भ्राता श्रीचन्द्रादित्य
 प्रथिविवल्लभ महाराजाधिराजस्तस्य प्रथमहि
 वी कलिकाल प्रतिपक्ष भूता श्रीविजय महा दे
 वी ॥ ६ ॥ ॥ सर्वानाज्ञापयति विदित सुवो वैशाख
 शुक्ल द्वादश्यां सोपवासा तु ॥ वत्सस्सगोत्राय केरव
 ना ॥ गोल स्वामिने कोत्रुरकग्रामे व कुलक
 च्छक्षेत्रनाम खज्जनसहितं उदकपूर्वन्दत्तं ८ तु ॥ ७ ॥ तु
 देवा सेतुनानि वार्यते योस्मद् दुःशजौ न्योवानुपाल
 यतिसपुण्य भागवति यश्चापहर्त्ता सपञ्च महापा
 त कसंयुक्तो भवति षष्टिवर्षसहस्राणि स्वर्गे
 मोदति भूमिद आच्छेत्तान् चानुचानु मन्ताच्च तान्येवनरके च
 से । स्वदत्तां परदत्तां वा यो हरेत वसुन्धरां षष्टिवर्ष
 सहस्राणि विष्टायां जायते किमि ॥ ८ ॥ ॥ ६ ॥ ॥ ६ ॥ ॥

Table explanatory of the several Plate Characters.

Plate N ^o 3	Plate N ^o 2	Plate N ^o 7	Modern Sanskrit	Corresponding English characters	Plate N ^o 5.	Plate N ^o 2.	Plate N ^o 7.	Modern Sanskrit	Corresponding English characters
सु	सु	सु	अ	a	द, द	द, द	द, द	र	ta
सु	सु	सु	आ	a'	उ	उ	उ	र	tha
सु	सु	सु	इ	i	ए	ए	ए	र	da
सु	सु	सु	उ	i'	अ	अ	अ	र	dha
सु	सु	सु	ऊ	u	इ	इ	इ	र	na
सु	सु	सु	ऋ	u'	उ	उ	उ	र	ta
सु	सु	सु	ॠ	ri	ऊ	ऊ	ऊ	र	tha
सु	सु	सु	ऌ	ri'	अ	अ	अ	र	da
सु	सु	सु	ॡ	li	इ	इ	इ	र	dha
सु	सु	सु	ए	li'	न	न	न	र	na
सु	सु	सु	ऐ	Wi	न	न	न	र	pu
सु	सु	सु	ओ	e	प	प	प	र	pha
सु	सु	सु	औ	ae	प	प	प	र	ba
सु	सु	सु	अं	o	घ	घ	घ	र	bha
सु	सु	सु	अः	ao	घ	घ	घ	र	ma
सु	सु	सु	अः	am	घ	घ	घ	र	yu
सु	सु	सु	क	ah	घ	घ	घ	र	ra
सु	सु	सु	ख	ka	घ	घ	घ	र	la
सु	सु	सु	ग	kha	घ	घ	घ	र	wa
सु	सु	सु	घ	ga	घ	घ	घ	र	sha
सु	सु	सु	ङ	gha	घ	घ	घ	र	sha
सु	सु	सु	च	na	घ	घ	घ	र	sa
सु	सु	सु	छ	cha	घ	घ	घ	र	ha
सु	सु	सु	ज	chha	घ	घ	घ	र	ka
सु	सु	सु	झ	ja	घ	घ	घ	र	ka
सु	सु	सु	ञ	jha	घ	घ	घ	र	ka
सु	सु	सु	ट	na	घ	घ	घ	र	ka

Vowel-marks					
-	~ ~ ~ ~ ~ [*]	o [*] o [*]	o [*] o [*] o [*]	u [*] u [*] u [*]	u [*] u [*] u [*]
-	τ	ρ	τ	ι	ι
a	a'	i	i'	u	u'
~ ~ ~ ~ ~ [*]	~ ~ ~ ~ ~ [*]	o, r [*]	o + r [*]	o [*]	o [*]
z	z	τ	τ	ι	ι
e	ae	o	ao	an	ah

Dotted letters are doubtful.

Letters and vowel-marks, agreeing with those given in Princep's Tables, are marked with an asterisk.

ART. V.—*Some account together with a Fac-simile Devanāgarī transcript and translation of a Copper-plate Inscription in the Society's Museum.* By the REV. P. ANDERSON, M. A.

The reare in the Society's Museum two plates engraved in what has been called the Gupta character and which is found on coins, stone slabs and copper-plates of the fifth and preceding centuries. Of one of these plates, which is called in these remarks No. 1, a fac-simile is given in a communication to the Bengal Asiatic Society's Journal for September 1835 made by W. H. Wathen, Esq. Secretary to the Bombay Government. The fac-simile is complete with the somewhat remarkable exception of the date, which is now supplied (72) and to which I shall have occasion to refer again.

The second plate Mr. Wathen stated to be so impaired by time and damp that only a part was legible. It occurred to me however that as a part was in good preservation, the whole might be decyphered by comparing it with corresponding plates. Accordingly I discovered in the Bengal Asiatic Society's Journal for November 1838 a Devanāgarī transcript of a grant, which has enabled me to obtain a sufficiently correct acquaintance with the contents of this plate. This—which is here called No. 2,—is important as containing a regular list of kings in succession to those of No. 1.

Both these plates record grants made by monarchs of the Valabhi dynasty and it is highly satisfactory that these and other records have thrown so much light upon this interesting family that by a collation of such documents we can arrive at some idea of their history.

The race traced its origin to the great hero Rāma who had two sons named Lava and Kusa, from the former of whom was descended Kanak Sena who emigrated to Dvārika and whom the Rānās of Udipur claimed as their ancestor. This family adopted for many generations the martial termination "Sena" or else "Aditya" denoting their solar origin, the one or other of which titles is ordinarily

found on these copper-plates attached to the names of princes; Bhataraka was also a family name and is engraved on the seals attached to the grants. Kanak Sena wrested dominion from a prince of the Pramara race and founded Bhaunagar in the second century of our era. Four generations afterwards Vijaya Sena founded Vijayapura, Vidarbha and more particularly the famous Valabhi situated ten miles to the north-west of Bhaunagar. The Jaina religion is said to have been established in this place, but the Solar Orb and its type, fire, were the chief objects of their adoration. It arrived at great prosperity and was the chief town of Suráshtra. In the midst of the city was a fountain sacred to the sun from which arose at the summons of its king S'iláditya the seven headed horse Saptás'wa which draws the car of Súra, to bear him to battle.

At last "the beautiful kingdom of Valabhadra" (1) was invaded by a barbarian force from the north A. D. 524, and the city "of a hundred temples" was sacked. In vain did S'iláditya call for his seven headed steed, against which it was supposed no foe could prevail. A treacherous minister revealed to the enemy the secret of annulling this aid by polluting the sacred fountain of the sun with blood. The charm was broken. No celestial war-horse came and the helpless Valabhis awaited their doom. Gazni near the modern Cambay became the last refuge of the family, but that too was captured by the barbarians. All fell except the daughter of Pramara. "The house of S'iláditya was left desolate. In its defence his heroes fell; of his seed but the name remained."

Colonel Tod thought that these barbarian invaders were Scythic, and Mr. Wathen that they were Bactro-Indians of which race many coins have been found in Suráshtra. Mr. Elphinstone suggests that they were Persians under Naushírwán.

As was mentioned, the daughter of Pramara the queen Pushpavatí alone escaped from the destruction of Valabhipura. Returning from a pilgrimage which she had made with a view of procuring from the gods the blessing of offspring she heard of her lord's death. Excessive

(1) Thus it is styled in Plate No. 2.

grief brought on her confinement and she was delivered of the son which the goddess had granted to her prayers. Committing her child to a trusty guardian, she mounted the funeral pyre and joined her husband. The boy was named Goha and becoming celebrated for his daring feats was elected king by the Bhils amongst whom he resided. From him was descended Bappa the next hero of the line of Valabhi. By his followers the dynasty and Jaina religion were transferred to Mewár. ⁽¹⁾

The city of Valabhi appears to have been never restored. The Valabhi line of kings was succeeded by a branch of the great Chálukya family of whose grants so many copper-plates have been discovered. Their seat of sovereignty was Analwara Patan.

These plates seem to establish the fact that the Valabhis did not at first exercise an independent sovereignty, but acknowledged a Suzerain who is styled in No. I. "the great sovereign, the sole monarch of the entire world," and to whom Drona Sinha was indebted for his elevation to the throne. Succeeding sovereigns are styled Mahárájá in plate, No. 1, but not in plate No. 2 until the reign of Dhara Sena the third who is styled "king of kings."

I now give a list of kings as found in these plates premising that it differs in some respects from lists which have been previously published.




1. Generalissimo Bhattarka succeeded by his son.
2. Dhara Sena I, succeeded by his younger brother.
3. Mahárájá Drona Sinha succeeded by his younger brother.
4. Mahárájá Dhruva Sena succeeded by his younger brother.
5. Mahárájá Dhara Pattah succeeded by his son.
6. Mahárájá Guha Sena succeeded by his son.
7. Mahárájá Dhara Sena II, succeeded by his son.
8. Mahárájá S'iláditya Dharmáditya succeeded by his younger brother.

(1) This account is drawn from Tod's annals of Rájisthán Vol. I. chap. 2. from the Royal As. Soc. Journal Vol. XII. part 1, from the Bengal As. Soc. Journal Vols. IV and VII, and from Elphinstone's History of India Book IV. Chap. 1.

9. Mahārāja Is'vara Graha succeeded by his son.
10. Mahārāja Dhara Sena III, succeeded by his younger brother.
11. Mahārāja Dhruva Sena Vālāditya succeeded by his son.
12. Mahārāja Dhara Sena IV, succeeded by his great uncle.
13. Mahārāja Dhruva Sena Dharmāditya son of S'ilāditya, and younger brother of Is'vara Graha.

In the Bengal Society's list the seventh, tenth, and twelfth of these kings are called S'rīdhara Sena, but in both the plates now before me the names are precisely the same as the second, i. e. Dhara Sena with the addition of S'rī which is common to all the kings. Moreover S'ilāditya is said in the Bengal Journal to be surnamed Kramāditya, but however glad we should be to recognize that well known name—the same as Vikramāditya—we must admit that the surname is clearly written on Plate II, Dharmāditya. Three of the other kings are not named Dhruva, but Dhruva Sena.

And now with regard to the dates—we have three of them to serve for our guidance. The first grant was made by Dhara Sena II son of Guha Sena, and was signed by his minister Skanda Bhaṭṭa. The two others were made by Dhruva Sena Dharmāditya, and signed by his minister Madana Hala, son of the above-mentioned Skanda Bhaṭṭa. From a reference to the list it will be seen that Dhruva Sena the last donor was grandson of Dhara Sena II, the first donor, and, as the minister of the former was father of the minister of the latter, we should not expect to find that any long interval had elapsed between the periods of the two grants.

The date of the first is thus , and not  as stated in the Bengal Journal, for April and November 1838. Supposing that the first symbol expresses 300, and the second 30, (1) we have the date 330. The second grant is said to bear the date 365, but no fac-simile of the symbol is given (2). The third grant (Plate II) bears the date  or 370, and some odd units, for the last symbol does not correspond with any produced by Mr. Prinsep. A comparison of their supposed

(1) See a paper by E. Thomas, Esq., in the R. A. S. J. vol. XII. part I, p. 35.

(2) Bengal A. S. J. vol. VII. p. 973.

dates with the history of the grants makes the conjectures regarding the value of the symbols extremely plausible. The second grant mentioned in the Bengal Journal, is dated in the month Vaisákha, and at least fifteen years earlier than the plate in this Society's museum which is dated in the month Pausha—both grants being made by the same king with the same minister.

At the same time there is some doubt whether α represents either 3 or 300. It is a suspicious circumstance that not only in all these plates, but in a series of coins of the Suráshtran princes, this symbol occupies the first place in the date, and we can scarcely suppose that all these kings, both of the plates and of the coins, lived in the same century (1).

There is however, a passage in a Chinese account of India, which, when compared with the supposed dates of these plates, affords a very remarkable coincidence. We are there told that, "Under the Tang-dynasty, in the years Wootch (A. D. 618 to 627) there were great troubles in India; the king (S'íláditya ?) fought great battles. The Chinese Buddhist priest, Huen Chwang who writes his travels, arrived in India at this period, and had audience of S'íláditya." (2) Now if the received supposition regarding the symbols of these plates be correct, S'íláditya reigned more than 300 years after the Valabhi era, that is, sometime after A. D. 619, which agrees remarkably well with the Chinese account.

We cannot fail to be struck with the points of similitude between these grants, and the Suráshtran coins. The figure of the bull Nandi is found in both, so is the title Kramáditya, and the common terminative Aditya ; so is that of S'rí and Rájádhirájá, and Paramabhagavata, all tending to confirm the supposition before hazarded that the Valabhi kings in their local government succeeded the Gupta monarchs.

A fac-símile, a Devanágari Transcript, and a translation of the first leaf of plate No. 2, are here given. The second leaf is so worn as to be illegible. Towards the end of this first leaf there are traces of at-

(1) R. A. S. J. vol. XII. Part I. p. 35. note.

(2) Quotation by Colonel Sykes in R. A. S. J. for May 1841.

tempts at restoration, and in many cases, altogether wrong letters appear to have been substituted. It became necessary therefore in making a translation to supply some sentences from the Bengal plate.

The two halves are joined together with a copper ring which has the usual seal of the Valabhis—a bull, and underneath it the name Bhaṭṭarka.

Some of the letters in plate No. 2, are different from those given by Prinsep, but as this might possibly have arisen from carelessness or ignorant attempts at restoration, they need not be specified, with the exception of the symbol (which more frequently expresses the letter *l* than the ordinary symbol **U**. For the Devanāgarī ए the symbol **2** is used, and also the more ancient form **I** which is scarcely to be distinguished from the symbol which denotes च. In plate No. I. **W** is also used for the same letter.

Devanāgarī Transcript.

स्वास्तिविजयस्कन्धावारे वासक प्रसभप्रणतामित्रानामै-
 चकानामतुलबलसपत्नमंडलाभोगसंसक्तप्रहार शतलब्धप्रतापःप्रतापःप्रता-
 पोपन ॥१॥ तदानमानार्ज्जवोपार्जितानुरागानुरक्तमौलभृतःश्रेणिबलावा-
 वासराज्यश्रियःपरममाहेश्वर श्रीभटर्कादव्यच्छिन्नराजवंशमातापितृच-
 रणारविंदप्र ॥२॥ णतिप्रविधौताशेषकल्मषःशैशवात्प्रभृतिखड्गद्वितीय-
 बाहुरे वसमदपरगजघटास्फोटनप्रकाशितसत्त्वनिकषःतत्प्रभावप्रणतारा-
 तिचूडारत्नप्रभासं ॥३॥ सक्तपादनखरश्मिसंहतिःसकलस्मृतिप्रणीतमा-
 र्गसम्यक्परिपालनप्रजाहृदयरंजनान्वर्थराजशब्देरूपकान्तिस्यैर्यगांभी-
 र्यबुद्धिसंपद्धिःस्मरशशांकाद्रिराजो दधिचिददशगुरुधनेशा ॥४॥ नतिश-
 यानःशरणागताभयप्रदानपरतयातृणवदपास्ताशेषस्वकार्यफलप्रार्थनाधि-

कार्यप्रदानानंदितविद्वत्सुहृत्प्रणयिहृदयः पादचारीवसकलभुवनमण्डला-
 भोगप्र ॥५॥ मोदःपरममहेश्वरःश्रीगुहसेनस्तस्यसुतस्तत्पादनखमयूखसं-
 ततविसृतजान्हवीजलौघप्रक्षालिताशेषकल्मषः प्रणयिशतसहस्रोपजीव्य-
 मानसंपद्रूपलोभादिवाश्रित ॥६॥ सरभसमाभिगामिकैर्गुणैःसहजशक्ति-
 शिक्षाविशेषविस्मापिताखिलधनुर्धरः प्रथमनरपतिसंमतिस्त्वनामनुपाल-
 यिताधर्मदायानामपाकर्तृप्रजोपघातकारिणामुपप्लवा ॥७॥ नादंशयि-
 ताश्रीसरस्वत्योरेकाधिवासस्यसंहतारतिपक्षलक्ष्मीपरिभोगदक्षविक्रमोविक्र-
 मोपसंप्राप्तविमलपार्थिवश्रीःपरममहेश्वरःश्रीधरसेनस्तस्यसुतस्तत्पा ॥ ८ ॥
 दानुध्यातः सकलजगदानंदनाल्यद्भुतगुणसमुदयप्रथितसमग्रदिङ्मंडलः
 समरशतविजयशोभसंनद्धमंडलाग्रद्युतिभासुरतरयोधिजनगु ॥९॥ रुमनो-
 रथमहाभारः सर्वविद्यापरापरविभागाधिगमविमलमतिरपि सर्वतः सुभाषित-
 लक्षणोपि सुखोपपादनीयपरितोषःसमग्रलोकेभोगगाम्भीर्यहृदयोपि ॥१०॥
 सुचरितातिशयसुव्यक्तपरमकल्याणस्वभावशालीभूतकृतयुगनृपतिपथवि-
 शोधनाधिगतोदग्रकीर्तिः धर्मानुपरोधोज्वलतरीकृतार्थसुखसंपदुपसेवानि-
 रूढःधर्मा ॥११॥ दिव्यद्वितीयनामापरममहेश्वरः श्रीशीलादियस्तस्यानु-
 जस्तत्पादानुध्यातः स्वयमुपेन्द्रगुरुणैवगुरुणात्यादरवतासमभिलषणीयामधि-
 राजलक्ष्मींस्कंधासक्तपरम ॥१२॥ भद्रइवधुर्यस्तदाज्ञासंपादनेनपरतयैवो-
 दहतखेदसुखरतिमुमनायितसत्त्वसंपत्तिःप्रभावसंपद्वशीकृतनृपतिशताशिरो-
 रत्नछायोपगूढ ॥१३॥ पादपीठोपिपरावज्ञाभिमानरसानालिङ्गितमनोवृ-
 त्तिःप्रणतिमेकांपरिख्यज्यप्रख्यातपौरुषाभिमानैरप्यरातिभिरनासादितप्रति-
 क्रियोपायःकृतनिखिल ॥१४॥ भुवनमोदविमलगुणसंहतिप्रसभविघटित-
 सकलकलिविलसितगतिःनीचजनाधिरोहिभिरशेषैर्दोषैरनामृष्टाशुभ्रतह-
 दयःप्रख्यातपौरु ॥१५॥ वास्त्रकौशलातिशयगणातिथिविपक्षक्षितिपति-
 लक्ष्मीस्वयंग्राहप्रकाशितप्रवीरपुरुषः प्रथमसंख्याविगमः परममहेश्वरः

श्रीश्वरग्रहस्तस्यतनय ॥१६॥ स्तत्पादानुध्यातः सकलविद्याधिगमविजित-
निखिलविद्वज्जनमनः परितोषातिशयसत्त्वसंपदायागौदार्येण च विधृतानु-
सन्धानसमाहृतारातिपक्ष ॥१७॥ मनोरथक्षोभजः सम्यगुपलक्षितानेकशा-
स्त्रकलालोकचरितगम्भीरभावोपिपरमनम्रप्रकृतिरकृत्रिमप्रश्रयं विनयशो-
भाविभूषणः समरश ॥१८॥ तजयपंडितकोदंडप्रबलोदग्रशरदंडविध्वंसि-
तनिखिलप्रतिपक्षदर्पोदयः स्वधनुः प्रभावपरिभूतास्त्रकौशलाभिमानसकल-
नृपतिमण्डलाभिनन्दि ॥१९॥ तशासनः परममाहेश्वरः श्रीधरसेनस्तस्यानु-
जस्तत्पादानुध्यातः सच्चरितातिशयितसकलपूर्वनरपतिरतिदुःसाधनाम-
पिप्रसाधयिताविष ॥२०॥ याणांमूर्त्तिमानिवपूरूषकारः परिवृद्धाङ्गगुणा-
नुरागनिर्भरचित्तवृत्तिभिर्मनुरिवस्वयमभ्युपपन्नः प्रकृतिभिरधिगतं रंगाक-
लापक्षांतिमान्निवृत्तिहेतुरकलङ्ककुमुदना ॥२१॥ थप्रभः प्रतापस्थगित-
दिगन्तरालप्रध्वंसितध्वांतराशिः सततोदितः सविताप्रकृतिभ्यः परप्रत्ययमर्थ-
मतिबहुविधप्रयोजनानुबन्धमागमपरिपूर्ण ॥२२॥ दधानः सन्धिविग्रहस-
मासनिश्चयनिपुणः स्थानानुरूपमादेशकृत्गुणभृद्भिः विधानजनितसंस्का-
रः सगुणराज्यशालागरीयस्तन्त्रयोग्यभयोरपि ॥२३॥ निष्णातः प्रकृष्टवि-
क्रमोपिकरुणामृदुदयः श्रुतवानप्यधर्मविश्रान्तोपिप्रणतिस्थिरसौहृदयो-
पिनिरसितरिपुवर्गाणामुदयसमयसमु ॥२४॥ पजनितजनतानुरागपरि-
पिहितभुवनसमर्थितः प्रथितबालादिखट्वितीयनामापरममाहेश्वरः श्रीधुवसेनः
तस्यसुतस्तत्पादकमल ॥२५॥ प्रणामधरणिकषणजनिताकिणलाञ्छन-
ललाटचन्द्रशकलः शशिभावगुश्रवणनिहितमौक्तिकमालांशुरभ्रमामल-
श्रुतविशेषप्रदानस ॥२६॥ लिलक्षालितविग्रहः

परम ॥३२॥ माहेश्वरः परमभट्टारकमहाराजाधिराजपरमेश्वरचक्र-
वर्त्ती श्रीधरसेनः

Handwritten text in a South Indian script, likely Grantha or Tamil, covering the entire page. The text is arranged in approximately 25 horizontal lines. The script is highly stylized and dense. A large, dark, irregular ink blot or smudge is present in the lower-left quadrant, partially obscuring the text. The paper appears aged and slightly discolored.



Translation.

It is well. He who dwells in the glorious metropolis, whose dignity was gained by a hundred conflicts which resulted in misery to a crowd of enemies, and by the unrivalled strength of friends who had been foes prostrated before his might; who was born of a pedigree which conciliated the affections it had gained by royal uprightness, respect and munificence, whose sin was thoroughly washed away by bowing to the lotus feet of his parents who were of a royal race in an unbroken succession from the glorious *Bhaṭṭarka* a worshipper of Mahá Isvara, and prosperous in the kingdom which he had obtained by the force of numbers; who tore the furious elephant-like hosts of his foes with his second arm which from childhood was like a sword; a touchstone of manifested truth; the brilliancy of whose toe nails was from the rays of the jewels of enemies crests bowed to his power; who observed altogether the course of duty prescribed in the whole law; for whom the word "king" had its meaning for he gained the hearts of his people; who surpassed Kuvera, Ganapati, the ocean, the lord of hills, the moon and love, in wealth, wisdom, depth, firmness, lustre and beauty; the fruit of whose actions was cast away like grass in bestowing the gifts of security upon those who came to him for protection; whose heart was drawn towards learned friends who were made happy by the bestowal of more wealth than they desired; who received enjoyment from the whole world as one travelling through it; the worshipper of Mahá Isvara, the glorious GUHA SENA.

His son, all whose sin was washed away by the rays of his father's toe nails as by a stream of Ganga water diffused abroad; who was the residence of desire, beauty and wealth which supported a hundred thousand friends; who as an archer astonished all by the special skill of his innate power, and qualities which were quickly gained; the preserver of gifts made by the wisdom of former kings; the remover of portents which caused difficulties to his subjects; a manifestation of Sarasvatí, and Lakshmi who dwelt together in him; whose power was capable of gaining possession of the wealth of hosts of enemies;

who had pure, and regal power obtained by his power; the great worshipper of Mahá Is'vara, the glorious DHARA SENA.

His son, who meditating on his father's feet was celebrated in all the four regions for the number of qualities which astonished, and delighted the whole world; who had great influence over the desires of the best of warriors who were made more illustrious by the splendour of his sword arrayed, as it were, with the ornaments of the victories of a hundred fights; possessing an intellect which had studied the good and bad parts of all science; who was distinguished for his excellent speech; who found a delight in communicating pleasure; whose heart was a depth of enjoyment for all people; who was endowed with a most happy disposition; whose vast reputation was obtained by purifying the ways of the kings born in the golden age, unrestrained by slavery to his prosperity, pleasure, and wealth, which were the more illustrations as they were no impediments to duty; the great worshipper of Mahá Is'vara, the glorious SÍLA'DITYA surnamed DHARMA'DITYA.

His younger brother meditated on his feet; he was fit to bear, as if fortune were seated on his shoulder, the prosperity of a supreme sovereign which was equal to Indra's. His footstool was concealed by the lustre of the jewels from a hundred heads of kings who had been subjected to the prowess of his power; his mind was not embraced by the sentiments of pride and contempt; revenge was unattempted even by those of his enemies who despised celebrated men, and ceased to shew him courtesy; the forgotten course of the iron age was inverted by the force of his pure qualities which rejoiced the whole world; his large heart was unscathed by those vices which exist in vile persons; his heroism was manifested, and it took to itself the prosperity of hostile kings who became his guests in consequence of his large armies, the success of his arms, and his great reputation; he ever occupied the first place, the worshipper of Mahá Is'vara, the glorious IS'VARA GRAHA.

His son meditated upon his father's feet; all learned men were surpassed by his study of all the sciences; he knew the emotions by which the hosts of his collected foes were agitated after their investi-

gations into his magnanimity, abstraction from the world, wealth, excessive goodness, and happiness; he had a very humble disposition, and at the same time profound experience in men, arts, and various works which he thoroughly understood; he was delightfully adorned with the modesty of unartificial courtesy; the rising of the pride of all his opponents was destroyed by the chastisement of his arrows propelled by the force of a bow which had learned victory in a hundred fights; his edicts were delighted in by a multitude of kings the pride of whose success in arms was dispersed by the power of his bow, the worshipper of Mahá Is'vara, the glorious DHARA SENA.

His younger brother meditated upon his feet; all former kings were eclipsed by his good conduct; an accomplisher of the most difficult affairs he was, as it were, manly energy become incarnate; like Manu he was self-endowed with strong feelings, love of virtue, and a full-grown stature; bright as the lord of the lilies when he is without spot; a sun which is ever risen, by which the mass of darkness is destroyed when the sky is covered with its brilliancy; completely and accurately skilled in peace and war; accomplishing that which is produced by religious rites; of pre-eminent heroism and yet with a merciful and gentle heart; attending to the scriptures, and ceasing from sin; firm in his attachment to such as submitted, but prompt to repress his enemies before their prosperity gained head; the celebrated worshipper of Mahá Is'vara, the glorious DHARUVA SENA surnamed VÁ'LA'DITYA.

His son had on a part of the moon of his forehead a callous spot caused by rubbing the ground in bowing to his lotus feet; the effulgence of a string of pearls was attached to his ears which were beautiful as moon-light; his body was washed with the water of liberality according to the clear and pure scriptures.....
 The worshipper of Mahá Is'vara, the sage, the king of kings the mighty lord, the emperor, the glorious DHARA SENA.

ART. VI.—*A Geographical Description of certain parts of the Southeast Coast of Arabia to which is appended a short Essay on the Comparative Geography of the whole of this Coast.* By H. J. CARTER, Esq., M. S., formerly Surgeon of the H. C. Surveying Brig. "Palinurus."

Two excellent "Memoirs" of the Southeast Coast of Arabia, by Captain Haines I. N. now Political Agent at Aden, have already been published in the IXth and XVth Volumes of the Journal of the Royal Geographical Society, but these relate more particularly to the parts which Captain Haines surveyed. Since that the remaining parts of this coast have been surveyed by Captain Sanders and Lieutenant Grieve I. N., respectively, and a similar memoir of them is required to complete the Geographical Description of the rest of this Coast.

It is to supply this desideratum that I have arranged in a descriptive form the few notes I made during the latter surveys, and as Captain Haines' "Memoirs" relate more particularly to the parts he surveyed, so my description will relate more particularly to the parts surveyed by Captain Sanders and Lieutenant Grieve. I could have wished that it had been accompanied by more nautical information, but I left others who were better fitted from their profession to collect this than myself, and I must still leave this for them to supply. The latitudes, longitudes, soundings and outline of the coast will of course be found in the beautiful charts which have been constructed from these several surveys.

Being now tolerably well acquainted with this coast throughout both personally and through what has been written of it in modern days, I have attempted also to compare it with the little that remains to us of its description by the Ancient Geographers, and this short essay I have appended.

Previous, however, to understanding the latter, or taking much interest in the former, it will be necessary to possess the charts of this

coast which have been published by the East India Company and to read at least Captain Haines' two "Memoirs." The charts of the latter surveys are not yet published, but are I believe in the hands of the engraver and will appear soon.

With this short introduction I proceed to my subject, and as we left Maskat each year to enter upon the surveys of Captain Sanders and Lieutenant Grieve, will commence my description from that place, briefly noticing the features of the coast on to Ras el Had.

On sailing southward from Maskat we observe the land at first, broken up and thrown into all positions resembling the waves of a troubled sea; rising tier behind tier until it reaches its maximum height at a mountainous ridge called Jibel Fallah¹, forty or more miles inland. This ridge which is about 6,000 feet above the level of the sea², as we continue our course southward, gradually approaches the coast, and terminates on the sea-plain in the northern boundary of a remarkable opening called the "Devil's Gap"; it is here called Jibal Kariyat,³ and is 6,228 feet high,⁴. Another ridge then commences forming the southern boundary, called Jibal Jābar which is continued on close to the sea to the town of Sur, where pursuing its original direction it leaves the coast-line again, while the latter trending eastward terminates in the low sandy plain of Ras el Had.

The "Devil's Gap" is the opening upon the coast of a great valley called Makalla Obūr⁵. It is remarkable for its narrowness and the great height of the ridges on each side, which being frequently joined together by a streak of dark clouds forms a fenestral opening through which an extended view of the picturesque valley within is seen to much advantage. The neighbourhood of this opening is well known for sudden gusts of wind, which frequently threaten destruction to the most sturdy crafts.

After this the land which I have stated to gradually rise from the shore, becomes precipitous and within eight miles of the sea attains a height of 4,400 feet⁶. At first it is called Jibel Jābar perhaps

1 Wellsted's map, Trav. in Arab. Vol. I. 2 Idem.

3 قريات 4 Chart by Lieut. Grieve. 5 مكله ابر 6 Lieut. Grieve.

after the Beni Jābar ¹ who inhabit it; and then Kalhat ² until it arrives at its termination close to the town of Sur; after this the coast turns to the eastward, and not rising more than 200 feet above the sea, terminates decreasing in height in the low sandy plain of Ras el Had.

Between the "Devil's Gap" and Sur, there are "no soundings more than half a mile off shore" ³, and here I may mention once for all that on this as well as on the southeastern coast, wherever the land is high close to the sea the soundings are deepest, and the rapidity with which the land shelves off and the depth of the sea are in proportion to the height of the adjoining cliffs, while the contrary is the case where the land is low and continues so for some distance inland. It may be taken as a rule that wherever the coast is low, there the sea is shallow, and wherever it is high it is deep. In lat. 22° 35' N., and long. 59° 33' E., is the town of Sur situated on the banks of a creek, and about ten miles further on towards Ras el Had are the entrances of two salt-water lagoons, the first of which is called Khor Jarāmah, and the second Khor Hajar.

Between the town of Sur and the entrance of the former, the sea cliff averages from fifty to seventy feet high.

Lieutenant Grieve, who surveyed this coast and to whom I am indebted for much valuable information respecting it, states:—"The entrance to Khor Jarāmah is from 200 to 250 yards wide, and bounded on each side by precipitous cliffs. The depth of the water from eight to ten feet, and the bottom muddy. After extending inland for about a mile and a half the channel becomes divided into two branches by a small rocky island, about the same height as the adjacent land, and then comes a spacious basin whose south and eastern shores are low, swampy, and overgrown with mangrove. On the S. E., the land is tabular to its termination, not only to Khor Hajar, but with the exception of a few hillocks to Jibal Saffan. A town once existed on the S. W. side of this lagoon, but is said to have been abandoned for want of water. A ruined town alone now marks its site. There are no in-

scriptions there. The anchorage is frequented by native vessels merely as a place of refuge during bad weather. It is in the territories of the shaykh of El Had" ¹.

About a mile further on towards Ras el Had is the entrance to the other lagoon called Khor Hajar. This is very inferior to the former, it is much smaller and nearly all dry at low water. The entrance to it is through the extremity of the sea-cliff just before the latter sinks into the sandy plain of Ras el Had. The channel is ragged, about 100 feet wide, and its sides about twelve feet high. After a distance of little more than half a mile, it opens into a shallow basin about a mile and half wide, bounded on the western side by the tabular land mentioned by Lieutenant Grieve, and on the S. and E. by the sandy plain of Ras el Had. Like Khor Jarāmah its longest diameter is east and west, and it runs eastward from its entrance.

At the eastern extremity of this khor are a number of ruins, and among them a large square building of modern construction, forsaken and also in ruins. There is also a little jetty or wharf at the eastern end of the khor which served as a landing place when, according to tradition, the khor was much deeper than it is at present. The ruins just mentioned do not appear to be the remains of buildings of any consequence, although they are said to be those of a very old town.

About 100 yards S.E. of them is the modern town of El Had ², consisting of one square mud building in ruins, and two round towers, with a number of huts enclosed within slight fences of bullrushes.

The inhabitants of the place when we visited it, appeared to be all industriously employed in making and mending fishing nets, and the shaykh, by name Abdullah, was a young man of high cast of countenance, and of gentle and prepossessing manners. He treated us with much civility, and offered us every assistance in his power during the time we were at El Had. The Captain made him presents, and he supplied us with water. Two or three days were spent on shore here in measuring a base and obtaining the latitude of the cape.

1 Priv. M.S. 2 Gharkah, with Capt. Haines.

The people of El Had and its neighbourhood are called the Muallak.¹ I was struck with the absence of arms among them, hardly any but the shaykh wore even a jambea. They color their faces with turmeric and oil; this forms part of their morning ceremony or toilet after prayers, and they are desirous, of paying the same compliment to strangers.

Returning to the entrance Khor Hajar, and following the coast eastwards we almost immediately pass from the table-land between it and Khor Jarāmah on to the sandy plain of Ras el Had, and two or three miles farther brings us to the angle forming the cape itself called also Ras el Gat² or the lowland cape. The latter is marked by the tomb of a shaykh said to have been called "Farrah," it merely consists of a simple ridge of masonry surrounded by a heap of stones. About a mile inland from the cape lies the town of El Had.

From this cape may be seen two remarkable mountains called Jibal Saffan which I shall presently describe, bearing about six miles south; the mountainous group called Jibal Kims³ about S.S.W.; and Jibal Jallan⁴ about S. W. by W.; the latter are the continuations southward of Jibal Kalhat and are the southern termination of the great mountainous range on this side of Arabia.

The soundings opposite Ras el Had deepen rather suddenly as well as I can remember, and when we were there a strong current set to the eastward. It is famous for large fish, we caught the largest cod there of any on the coast and all the other rock-fish taken were proportionably large, almost gigantic.

Proceeding southward from Ras el Had, for the coast now runs due south, the sea-cliff after a distance of three miles commences in the sandy plain with a few scattered rocks much as it ended on the western side, and soon reaching a height of 100 feet maintains this with the interruption of a short break or two here and there all the way to Ras el Khabba, a distance of twenty miles, where the coast, turns again, to the southwest.

In passing along this short extent of coast, which has an eastern aspect, we obtain a full view of the two mountains called Jibal Saffan, for they lie within a mile and a half of the shore. They are very remarkable, for they are the only mountains on this extremity of Arabia, and are eight or nine times higher than the rest of the land. Lieutenant Grieve makes them 855 feet above the level of the sea. They are extremely similar in their appearance and from their proximity to each other being but a mile and half apart, they merit the name of "Twins" more than any double mountain I ever saw. The northernmost is the most westward and therefore a notch is seen between them in sailing round this extremity of Arabia both north and south. They are coin-shaped and their scarped white surfaces present towards the west, while their more gradual inclinations tend eastwards or towards the sea; around them are a few low hills but beyond these there is nothing much above 100 feet. As a mark for Ras el Had or this extremity of Arabia they are unmistakeable.

From Ras el Khabba the coast as before said turns S. W., and soon becoming low and sandy continues so with the exception of a few hillocks at Ras el Rues, and a few rocks at Ras Jibsh, on to Ras Abo Ashrin, a distance of 100 miles. The chief character of this coast is its uniformly desolate sandy aspect. After the mountainous groups of Kims and Jallan nothing more is to be seen inland to the westward much above 100 feet and seldom even a mound so high as this on the coast.

The next cape to Ras el Kahbba proceeding southwestward is Ras Rues, consisting only of a few sandy hillocks, and between these two points, a distance of about three miles, is a little bay called the bay of Rues, while behind the cape, concealed from the sea, is a village of the same name inhabited by a few fishermen of the Beni Bu Ali¹ tribe. It was from thence that we obtained the pilots who conducted us through the channel between the island of Masira, (to which we shall soon come), and the mainland.

From Ras Rues the coast continues low to Ras Gomailah the next projecting point, and so on to Ras Jibsh. The town of Lashkarah, the principal one on this coast, lies about eight miles S.W. of Ras Gomailah.

After turning Ras el Khabba¹ the mountains of Jallan or Jibal Jallan become very conspicuous; they are about 3,900 feet high, and towering behind them is seen the mountainous ridge of Kalhat, while in front is a number of low sandhills and cones extending more or less on to Ras Jibsh. The latter are about five or ten miles inland. Jibal Jallan is about twenty miles from the shore.

In the map which accompanies the late Captain Wellsted's travels in Arabia, a "low ridge of lime-stone hills 200 feet high" is placed westward of Jibal Jallan; and beyond Ras Jibsh "sandy mounds topped with acacias." Messrs. Cole and Rankin who travelled from Jallan to Ras Jibsh, informed me when they arrived on board that they had passed over nothing but sand-hills and barren ground. Still farther westward of Ras Jibsh towards the Desert of Akaf, Captain Wellsted has placed "plains covered with a saline effervescence," so that all trace of mountains appears to be lost here on an increasing barrenness.

We now come to Ras Jibsh. This cape is about fifty-four miles from Ras el Khabba, and consists of a little ridge covered with white sand nearly to the top, where the dark rocks of which it is composed shew themselves in irregularly formed peaks and mounds. They are about 100 feet high. From their extremity a low reef extends outwards into the sea, and inside it is a small bay with water enough for fishing boats to land safely. This is called the bay of Jibsh. Formerly it is said to have extended a long distance inland behind the ridge mentioned where there still exists a lagoonal depression about two miles square, but now raised twelve feet above the level of the sea. The village of Jibsh is between this and the ridge, and consists of a few fishermen's huts built of the midribs of date-leaves. Jibsh is inhabited by the Janabah,² a cognate tribe of the Beni Bo Ali; they affirm that formerly Bagalos came into their harbour when the lagoonal depression mentioned, was covered with water.

From our station twelve miles S.W. of Ras Jibsh, we could see the highest points of Jibal Jallan and Jibal Kalhat but no other high land, even from the mast-head, in any other direction. Jibal Jallan must have been fifty milles off, and Jibal Kalhat at least seventy or eighty. The country over which we looked is called the Baten, or flat land; it must I think pass into the Desert of Akaf.

From Ras Jibsh to Ras Abu Ashrin, the aspect of the coast is more desolate than ever. Not a cone or elevation either inland or on the sea disturbs the uniformity of a continued wavy land about 100 feet high which appears to exist throughout; saving a little group of black huts on the shore called Nayah, there is not a particle which seems to differ from the general light brown color of the coast all the way to the neighbourhood of Ras Abu Ashrin.

About six miles however before arriving at this cape, there is a remarkable change. At intervals there is a sea-cliff varying in height to 100 feet, while in shore there are nothing but domes of white sand about 200 feet high like snow, smooth and frequently so hard on the surface that a man can walk over them without sinking. There is a place here also called Shebalah inhabited by the tribe of El Whebah, of whom I shall speak directly.

The tribes who possess the coast from Ras Rues to Ras Abu Ashrin, are the Beni Bu Ali, the Janabah and El Whebah.¹ I have already stated that the Mualak occupy El Had and its neighbourhood. The territory of the Beni Bu Ali extend sfrom Ras Rues to Ras Jibsh, but they are much mixed up with their cognate tribe the Janabah. Towards Ras Jibsh the inhabitants are nearly all Janabah, and continue so on to the neighbourhood of Ras Abu Ashrin where they join the Whebah.

Inland to the west of Jibal Jallan, are the Beni Bu Hasan,² the Beni Rashib,³ the Hashem,⁴ Mashakarah⁵ and Ammar⁶ and towards el Had, the Hajariten,⁷ Hareth,⁸ Habosh⁹ &c. About Sur are the

حجرتين 7 عمر 6 مشاكرة 5 الهشم 4 راشب 3 بوحسن 2 وهيبه 1
حبوش 9 حرث 8

Janabah, ¹ Hoājar and Sinan, ² and on Jibal Kalhat as already stated the Beni Jabar.

We received more attention from the Beni Bu Ali than from any other tribe, during the survey of this part of Arabia. They are religious, warlike and hospitable. The old Amir, who is the only remaining chief of those who were taken prisoners to Bombay in 1821, after the tribe had been nearly annihilated by the force under Sir Lionel Smith, was the only person in this part of Arabia who dared give us a pilot, to conduct us through the Straits between the island of Masira and the mainland. Although at the time I am speaking of very much afflicted with the infirmities of age, he would come on board to see the Captain, when the "Palinurus" was anchored off Ras Rues, and left with us two men, Hamed and Nassar, whose conduct afterwards in keeping good faith, and in the performance of their duties as pilots, was the admiration of all, and surpassed all praise that could be bestowed on them. Doubtless it was their religious regard for the old Amir that induced them to submit for so long a time and without murmur or dissatisfaction, to the many discomforts which their new mode of life on board an English ship with none but Europeans, must have entailed on them.

The providing of us with these pilots, however, had very nearly led to a breach between the Beni Bu Ali and Janabah, as the latter consider the Straits between Masira and the mainland peculiarly their own. They openly declared that they would go to war with the Beni Bu Ali the moment we left the shore, and although it is probable that they did not carry their threat into execution, still they cannot be otherwise than displeased with them for having allowed us to obtain through their assistance, a knowledge of a channel which offered to the Janabah a safe retreat in cases of piracy or other offences when pursued by an English vessel.

The admiration of the Beni Bu Ali for the English is unaccountable after the extent to which they were slaughtered by the force men-

tioned; their chief topic of praise is that their date-groves were not destroyed, or the tribe would have inevitably been annihilated.

The Beni Bu Ali are much more under the influence of their chief than any other tribe on this coast. Generally speaking on the south-east coast of Arabia, the Beduins acknowledge no authority in matter of dispute, though they admit priority of descent. The consequences of the "blood-feud" alone seem to restrain them from lifting their hands against each other, and this not often.

The Beni Bu Ali are Wahabis, and are strict in their religious observances. They do not smoke tobacco or wear the rosary, and are opposed to raising monuments over the dead. They hold the praying of their neighbouring tribes in great contempt, saying that they only throw their arms backward and forwards and touch the ground with their heads, but say no prayers. The Amir of the Beni Bu Ali enforces under threat of corporeal punishment, or even death, implicit obedience of his tribe to the catechism and laws of Abd el Whahab and his followers.

The countenances of those whom I saw, were peculiar. They were all middle sized men with shortish features, quick deep set, piercing eyes, and determined expression. They wear their hair long and flowing over the shoulders, but confined round the head by a leather cord. Their dress consists of the common Arab-shirt, and around their waist a broad leathern girdle buckled in front. Attached to this girdle are horns of the female gazelle, indeed the whole girdle is nearly made up of them, arranged perpendicularly side by side, and each contains a charge for a match-lock. In addition to this, the girdle has a pouch for spare bullets, and one for flints and tinder; a steel also in the form of a compressed ring is suspended to it by a long string; while round their neck is a leathern loop to which is attached a powder flask which hangs down between their shoulders, and is made out of a goat's horn ornamented with silver.

Having mentioned the principal tribes which inhabit this angle of Arabia, I will now briefly state the information obtained respecting the towns and villages of those who live on the coast.

The village of Rues I have mentioned. Next to this comes Laskhara, the largest by far on this coast. I have before stated that it is about eight miles S.W. of Gomailah; it contains about 200 houses and about 1,000 inhabitants, most of whom are members of the Beni Bu Ali tribe. They have several boats.

The next place worth mentioning is the village of Jibsh, which as before stated, is inhabited by Janabah, and consists of a few huts scattered over the sand behind the ridge of the cape. These are about a mile inland and situated on an exposed cheerless waste. They are built of the midribs of date-leaves both walls and roof, and are about six feet square; sparingly furnished, for they contain nothing more than an earthen jar or two for cooking and for holding water; the soft sand which forms the floor serving for both bed and bedsted. The fuel of the Janabah here which consists of the dried herbaceous shrubs of the desert, is kept from blowing away, by a large meshed net fastened over it to the little hut, so bleak and exposed is the situation.

The inhabitants subsist almost entirely on fish with the addition of dates, and a little rice when they can obtain it. The dates are brought from the interior on camels in exchange for dried fish. They procure the rice by the sale of shark-fins and other dried fish at Maskat, or from the Nakodahs of vessels trading along the coast.

Miserable, however, as their condition appears to be they contrive to get wealth enough to ornament their wives with silver armlets, necklaces, &c., and within a few hours can manage to assemble a very fair display of sheep, as to number; all ewes which they keep for milk; only one or two rams are kept, the rest are devoured almost at their birth. The pasturage here consists of a sweet kind of grass which grows in tufts just above the sand; these tufts consist of the matted fibres of old roots, which extend deep into the ground and are sparingly scattered here and there.

The people of Jibsh were so much frightened on our approaching the shore that they had laden their camels with their ropes, sails, fishing nets, &c., and were on the eve of starting when one of our Beni Bu Ali pilots leaping into the water, swam to the shore and assured them that we were not going to harm them. Their women

and children, sheep, camels, and all that they had of any value, were prepared ready for flight.

I endeavoured to find out from them during the two days I passed on shore, if the country round was much inhabited, but could obtain no satisfactory answer. They did not know or evidently exaggerated the number of inhabitants from fear. A Beduin who had just arrived from the interior, answered my questions by taking up a handful of sand and carelessly dropping it, meaning me to infer, that they were as plenty as grains of sand; another said there were no people at all to the westward, and a third whose answer was probably the most truthful of all, stated that he knew nothing at all about it.

The Janabah whom I saw here, were rather undersized, not bad looking though thin and ill fed. They were all very dark and wore their hair and were dressed, like the Beni Bu Ali. The fishermen of the coast, however, were of a lighter color than the rest; their heads were long and compressed; their foreheads high, but with the hairy scalp extending much over them. The nose particularly Jewish, and the septum nasi considerably beneath the nostrils or the latter elevated. They are all "wreckers," and consider every thing that stands on this coast the property of the tribe to whom the part of the coast belongs. It would be well for many perhaps if they kept to this, but the probability is that they are no more content with it alone than the Beduins on shore with what they can honestly obtain. If the truth were known, I expect the Janabah are the worst characters on this coast.

Next to Jibsh, with the exception of the few huts close to the sea called Nayah, also inhabited by Janabah, comes Shebala.¹ This place or group of huts, is situated among the white sand hills mentioned, close to Ras Abu Ashrin. It is inhabited by the Whebah. Their huts are constructed just like those at Jibsh, and of the same material. The Whebah tribe is said to extend from this cape up to Maskat, which means I suppose a long way inland in that direction.

When we approached their shore, in one of the ship's boats, the inhabitants who had been watching us like the people at Jibsh, were seen wading with their camels over the sand hills as fast as the nature of the ground would allow them, so that when we landed there was not a soul to be seen. At length two men made their appearance on the top of one of the hills, and slowly descending approached us with great caution, and seated themselves at a distance. Our Beni Bu Ali pilot then addressed them, and after a short conversation in which they were made to understand that our visit was a friendly one, they came and sat by us, and this being a signal for the rest who in all probability were peeping over the tops of the hills at a distance that there was no fear, the whole party soon returned and tranquillity was re-established. They then told us that they had fled under the idea that we were in league with the Beni Bu Ali and Janabah, and had landed to plunder them. Having come to a proper understanding, oaths were taken on both sides that person and property should be respected while we remained there, and the usual business of buying sheep and taking observations commenced, the former assisting greatly towards reconciliation.

The Whebah like the Beni Bu Hassan are said to be subdivisions of the great tribe of Hanāwi, while the Beni Bu Ali and the Janabah are descended from the Beni Ghafir.¹ The territories of the former extend from Ras Abu Ashrin where they have a few miles of sea-coast, northwards towards Maskat, and their Shaykh, whose name in 1845 was Nassar Bin Ali, is said to reside at a place inland called Sidirah.

They informed us that the land towards the N. and N. W. was all sand-hills, and that half the way to Maskat it was the same; also that towards the W. and S.W. there were neither inhabitants nor water, all was sand.

It would appear that the Whebah inhabit the eastern borders of the desert of Akaf, and next to them eastward come the Beni Bu Hassan, and then the Beni Bu Ali and Janabah. The two former are allies of the Imaam of Maskat, the two latter his adversaries; the former are of the orthodox religion, the latter Wahabis. Hence there is great enmity

of feeling between the two parties and the poor Whebah on the little coast, they possess get much persecuted by both the Beni Bu Ali and Janabah. By the former perhaps more on account of their religious differences, by the latter from jealousy, arising from the advantage they have in being able to fish on the coast, and perhaps keep up a kind of espionage there. As to religion, I hardly think the Janabah have any, at least if they might be judged in this respect by their outward observances; if they incline to any particular sect it is probably to the Wahabis from their intercourse and relationship with the Beni Bu Ali.

The huts of the Whebah and their means of subsistence are similar to those of the Janabah at Jibsh, but the people are much better looking and more gay and playful. The same was stated to me of the Beni bu Hussan by Mr. Cole who visited this tribe, while the Beni Bu Ali were gloomy and determined in their expression. Some of the Whebah girls were exceedingly pretty, and unlike the Beni Bu Ali, the women of this tribe do not conceal their faces, so far as we saw. Many of the young women were engaged in making rush basins commonly used by the Beduins for holding milk or water. In doing this they wear pendent from their left wrist a little basket in which are coiled the slender rushes ready for use, and thus with both hands free they continue to work either walking or sitting or while conversing, much after the way in which knitting is done among more civilized people.

The Whebah have but few boats, and being very poor are obliged to have recourse to the inflated skin called *kirbah*, (vulg. *girib*). The inhabitants of Sindh on the Indus use a large earthen pot; on the Malabar coast and at Madras the poorer classes use a piece of wood or two roughly bound together called a "catamaran", for a float; but here, where they have no clay to make earthen pots and no wood to make catamarans, they substitute the skins of sheep.

The *kirbah* is commonly used by the inhabitants of this coast, from Ras Rues where I first saw it to the village of Hasek, in Curiyah Muriyah bay. But with the poor Whebah at Shebalah

its use is seen in perfection. So soon as a shoal of fish, to wit "sardins," is viewed from the heights by those who are watching for them, the whole assemble and seizing their skins and castingnets rush to the water's edge. Here the skin is quickly soaked and inflated, after which the hind and fore legs are tied together with a string. Thus prepared they step into the ring and slipping the skin up towards the lower part of the stomach, throw their castingnets across the left shoulder and wading into the water up to their necks, sit upon the string which rests against the back part of their thighs, and thus paddle away with their hands to the place where the fish are. In this way I have seen as many as twenty at a time enter the water and swim out to a distance of two miles. When they have arrived among the fish they throw their castingnets, and gathering them up return to the shore with what they contain, having no means of securing the fish on the spot.

To give some idea of the poverty of these people I may mention that their castingnets were made of cotton twisted into the coarsest cord, and the sinkers attached to their circumference, instead of being composed of small pieces of lead, consisted of stones half as large as a man's fist with holes in them. Lieutenant Wellsted speaks of the Janahab fishing for sharks on the *kirbah* on this coast¹.

From Ras Abu Ashrin, in lat. 20° 58' N. and long. 58° 44' E. we stretched over to the island of Masira, about sixteen miles nearly due south, and there anchored off Ras Alf the N.E. end of this Island. Not, however, without the Whebah having earnestly persuaded us not to go on shore there, as the Janabah, the inhabitants of the island, whom they considered the most treacherous and wicked people in the world, had sworn to murder the first boat's crew who landed on it.

Of this, however, we took no heed, although we were not without suspicion; but the Whebah were right, the Shaykh of Masira, Salim bin Hamed, had resolved to meet us with the reception mentioned, and would have done so but for the interference of his nephew the Shaykh of Sur, who came down on purpose from that place to com-

¹ Trav. in Arab. Vol. I p. 79.

pel his uncle to withdraw his opposition; and the latter did so, but most unwillingly for he continued to evince his displeasure towards us, by never coming near us during the whole of the time the island was being surveyed. The Shaykh of Sur's interference was a matter of policy no doubt, on account of the number of bagalos trading between Sur and Bombay, and Arab-like, he concluded that any offence offered to the crew of the "Palinurus" by his uncle, would be visited on the head of the first of the family that the Company or the "Sirkar" as they term it, could lay their hands upon. This probably induced him to become our mediator, and to keep us privately informed, which he did, of every thing that was going on at Masira.

Without following the line of survey all round this island which would be tedious here, I will immediately proceed to its description.

Masira is of an irregular oblong form, constricted in the middle, and narrowed at each extremity. Its longest diameter is N.N.E. and S.S.W., and amounts to thirty-five miles; and its greatest breadth is nine miles, while its shortest breadth in the centre is only four miles and half. A chain of mountains traverses it longitudinally, from which long ridges extend to all the principal capes, and shorter ones branch out almost all over the island. The highest mountain is only 600 feet above the level of the sea, it is in the N.E. half of the island, and is called Jibal Madrub¹. At a distance these mountains have a conical appearance but on closer examination are found to be rocky, and irregularly pointed. I saw no lava in the island the whole time I was there. The rocks geologically speaking are chiefly of primitive greenstone, serpentine, trap and basalt, with here and there limestone. In the N.E. half of the island there is a tabular tract of limestone about two miles long, and half a mile broad raised upon the greenstone, about 400 feet above the level of the sea. It contrasts remarkably in its horizontality and color, with the dark rugged igneous rocks around and beneath it. There are other small patches of limestone similarly

situated; and at the S.W. extremity of the island is a mountain of it. The plains of the island are sandy, and mostly confined to its inner side, where they extend from the base of the mountains to the sea, above which they are only raised a few feet.

So far as vegetation goes, the island may be said to be almost barren. There is hardly any trace beyond a small herb or two on the mountains, and on the plains nothing beyond a few dwarf babal and tamarisk trees, some herbaceous shrubs, and the matted tufts of grass before mentioned, scattered here and there. A small garden exists in the centre of the island from which we got a pilgrim's gourd, and here and there about half a dozen groups of date-trees in not more than three of which are there fifty, and in the rest hardly more than half a dozen in each, all looked ill-watered and ill-nourished.

The wild animals consist of gazelles, and small gray rabbits exactly like the English wild rabbit but not more than half its size. The domestic animals are sheep, goats, dogs, cats and fowls. Sheep and goats are few from the want of pasture, and an old wrinkled bull which was presented to us for our Christmas dinner, was the only head of cattle on the island. Good water is to be obtained throughout the year, a few feet below the surface on the inner side of the island towards its centre.

The inhabitants live chiefly on this side, it is most sheltered and offers most plains. They are with the exception of a few families of the tribe of Hakiman¹ (Okman?) all Janabah, and may number about 1000 souls.

Their food consists chiefly of fish, turtle and dates, and occasionally a little rice and flesh, but the latter are considered great luxuries and fall to the lot of very few. It is customary for many of the women and children to frequent the rocks daily at low-water to eat shell-fish. This they are said to do more particularly when their husbands are away, and they have no one to catch other fish for them. Our Masira pilot Dalkhan, on landing, always went to the rocks and ate a species of shell-fish called chiton, as people would eat bread, and yet

his rations on board were both in quantity and quality far superior to any thing he could have ever before met with. The island of Masira abounds in the bones of turtles which are strewn over its surface; this shews how much the inhabitants live on them; but the dish of which they are most fond, consists of boiled gray mullet. These fish frequent the shores in large numbers, and as the breakers curl over, are seen through them, ready to swim up with the wave, and feed on the worms washed out of the sand; at this time the fisherman rushes into the froth and foam, when the mullet cannot see him, and casts his net, in which he is almost always sure to enclose several.

On the inner side of the island are several small groups of huts. Coming from the N.E. are Argit¹ and Dua,² and then Om Rasas,³ Safaj⁴ and Sur Masira.⁵ Om Rasas is the only place worth mentioning. It contains a round mud tower, and several houses, and probably about 500 inhabitants. It is situated about the centre of the island opposite an offset of the main channel. The shaykhdom of Masira belongs to the family of the shaykh of Sur, hence there is much intercourse between these two places. Among the perquisites of the shaykh of Masira, are said to be the heads of all turtles and porpoises caught around the island, as one of the perquisites of the shaykh of Raidah a town on this coast near Ras Bagashwa, is said to be the unborn young of sharks caught near that place.

At Om Rasas there is a Lutean, a member of the Kojah cast (500 of whom live at Mutarah near Maskat), who acts as Banian or Merchant, and Banker. He supplied us with rice and was very civil to us.

The staple articles of the island are shark-fins, dried shark and seer-fish, and *dibbal* or the horn of the inedible turtle. A good set of shark-fins will sell for four or five dollars at Maskat, and the horn of a large turtle if of good quality from ten to eighteen dollars.

The inhabitants of Masira have four bagalos, twenty large badans, and thirty fishing boats.

There are many veins of copper ore in the island of Masira, and

سور مصيرة⁵ سفاج⁴ ام ريس³ دوة² عرجيت¹

they have been slightly worked; for an account of these I must refer the reader to Art. VII. No. XI. of this Journal.

The S.W. half of the island is nearly uninhabited. It is here that the few families of the tribe of Hakiman or Okman, who people the bay of Hashish on the opposite coast, reside, at a place called Gairen or Karun about eight miles from Om Rasas. The extremity of this part of the island which is called Ras Abu Rasas is the resort of fishermen during the fair season to catch and dry and salt seer-fish and make porpoise oil. The seer-fish abound at this cape and are caught with a hook and line or in a sein as mackarel are on the coast of England when they pursue the "bait" or small-fry close to the shore. Indeed the seer-fish is in appearance but a mackarel, of a much larger growth, being sometimes four or five feet long. It is extremely rich and of a delicate flavor, hence its Persian name *shir mahi*, or milk-fish.

The turtles abound between Masira and the mainland, but more particularly in the neighbourhood of Ghobat Hashish, where they are said to almost swarm. There are two kinds, the edible, probably *Chelone mydas*, and the inedible *C. imbricata* or hawks-bill turtle, both common to the Indian Ocean. They grow to much about the same size, one of the former for which we gave two rupees weighed 266 lbs. The latter, or inedible turtle as it is termed from being much less fleshy and much less fat, yields the turtle-shell of commerce. They are caught by being turned on the back when they come on shore at night to lay their eggs, or harpooned in shallow water, with a barbed loose spear-head fixed to the end of a long bamboo. The spear-head catches in their back, and having a small rope attached to it the turtle is thus pulled on board. The inedible turtle is much scarcer than the edible one. I did not see a specimen of the former all the time I was at Masira, though many pieces of its shell were brought on board for sale. It is taken off the carapace by lighting a fire under the latter; the carapaces of both species are used by the Arab-fishermen for fire-places in their boats.

Ambergris is also sometimes found on the shores of Masira as well as on the opposite coast. While we were anchored off Ras Abu Rasas a Beni Bu Ali fisherman ran his boat alongside and through

my scuttle handed me a piece worth upwards of a hundred dollars, judging from its weight. He stated that while shark-fishing on the coast southwest of Masira he had gone on shore with two or three others, and had found some Beduins hacking a large mass of it with their swords, who not knowing the value of it, allowed them to take it for a few dried fish. The portion handed me by the Beni Bu Ali was his share of it. It was evidently the segment of a large sphere formed of thin layers, consisting of the ink and undigested beaks of cuttle-fish held together by a substance like cholesterine. I was struck with the analogy that it bore to the hair-ball found in the ox's stomach, particularly when I considered the close relation that exists between the whale (*physeter maccocephalus*, from whose intestines it is said to come), and the ox. This coast abounds in the sperm whale and several other species of cetacea, and of course with myriads of cuttle-fish and cephalopds of all kinds on which the former feeds.

It is stated by the Arab fishermen that sharks are so fond of Ambergris that wherever there is a piece floating, for it is very light being resinous, it is almost sure to be surrounded by several sharks gnawing at it. Once while fishing in the straits of Masira we saw something floating a few yards off, and great fish biting at it; when one of our Beni Bu Ali pilots who was with us, suddenly leaped into the water and swam to it. He told us after his return that he thought it had been a piece of ambergris but it turned out to be a dead cuttle-fish, much to his disappointment.

The channel between Masira and the mainland is about ten miles wide, and so shallow that the greater part of it is nearly dry at low water. It gradually deepens from the mainland, (which is here on a level with the sea,) outwards, so that the only navigable part is found close to the island of Masira. Channels of course exist in the other parts, but these are more or less shallow and irregular in their course. There are several islands in it; some of which only appear on the receding of the tide, and others only prove their positions by the ripple over them. Opposite Om Rasas there is a long sandy island covered with mangrove, on the borders of which are myriads of wading birds.

such as Flamingos, Curlews, Plovers, etc. who assemble there to feed at low-water.

Further towards the S.W. are two other islands formed of black basaltic rocks. One, the largest, is about 100 yards long and formerly was covered with guano, but with the exception of a few cart-loads, then scraped together there, the whole had been carried away. The inhabitants told us that it had been carried to Makalla and to places on the coast and in the Red Sea, to manure tobacco ground etc. Here and there rocky reefs come very near the surface in this channel, between Ghobat Hashish and the S.W. extremity of the island of Masira.

On the outer or sea side of Masira there is nothing remarkable but the headland called Ras Jah, which is the extremity of a great spur from the main range of mountains, extending outwards from the N.E. half of the island, and again a little to the N.E. of this is a small island close to a cape, called after it Ras Jazirah.

The climate of Masira and that of the opposite coast when we were there, during the months of December, January and February 1845-46, was very delightful. The temperature seldom exceeding 72° and 74° Fahr. in the gun-room. Captain Wellsted states (*Travels in Arabia* Vol. I. p. 81) that invalids from Maskat frequently come to reside in this direction for the benefit of their health, probably during the winter months, for during the summer it must be intensely hot, since there are no rocks, no trees, nor anything else on shore to afford shelter from the sun's rays direct or reflected.

As to the religion of the Janabah at Masira, it is almost impossible, as I before stated, to say what it is from their religious observances. I never saw any of them say their prayers. Our Masira pilot Dalkhan never said any prayers, nor did I ever see any of the Whebah say their prayers, nor any of the tribe of Hakiman whom I encountered. Moreover, an elderly man of the latter, whom we met at Gairen and who shot a Gazelle for us there, ate heartily off a piece of a salt beef we had brought on shore, he and his children, and took the rest home. The absence of religion and religious observances among these tribes is not to be wondered at, for the inhospitable nature of the country

they inhabit would effectually oppose any continued attempt at their instruction or enlightenment. Nothing but such fanaticism as existed in the early part of the Mohomedan era could induce people to come and dwell in such a place and among such tribes for the purpose of teaching them their religious duties, and we see how long this has lasted.

Let us now return to the mainland, to Ras Abu Ashrin which we left, and continue our examination of the coast south-westward. Up to Ras Abu Ashrin, although we had long lost sight of all mountains inland, yet the coast continued upwards of 100 feet above the sea. We now come to a part where it is nearly on a level with it; the only instance of the kind unbacked by mountains on this coast.

This flat land which is opposite the island of Masira is continued on from Ras Abu Ashrin to Ghobat Hashish, a distance of thirty nine miles, where the same kind of sand-hills are met with as those at Shebala, most probably a continuation of them, limiting inside the flat land, which presents nothing remarkable beyond a few scattered bushes of tamarisk and salsola, and a few tufts of grass and rushes.

To ascertain that there was no highland in the neighbourhood, I took particular care while on some of the most elevated parts of Masira to examine the in-shore horizon both with my naked eye and with a telescope, and I saw nothing whatever but a vast extent of white sand-hills bounded by a misty horizon. I have already stated that the high mountains of Jallan and Kalhat were seen from the deck at our station twelve miles S.S.W. of Ras Jibsh, that is a, distance of 70 or 80 miles, while from the highland of Masira which is at least 400 feet above the level of the sea I could discover nothing above the common level of the country inland. It is as I have before said to this part of southern Arabia that the Arabs give the name of Baten or low flat-country, it forms the south-eastern part of the great desert of Akaf.

From Ras Mashub, which corresponds to Ras Abu Ashrin in being the south-western extremity on the coast of the flat just mentioned, and the last point of the mainland opposite Masira, the coast trends westward, and continues in this direction for about twelve miles, when

it again turns to the northward, and after six miles more, ends at Ras Shijar, the eastern point of the entrance to the bay called Ghobat Hashish. The shore thus described forms the southwest boundary of the flat land between Ras Abu Ashrin and the bay last mentioned. It was here that the American ship "Peacock" grounded and was set upon by the Beni Hakiman, some members of whom came on board the "Palinurus" and told us that they were of the party, and were surprised that as the vessel had stranded on their coast they were not allowed to claim her. They seemed to be very cheerful people and expressed themselves very glad that we had come over to their coast, for they had been impatiently waiting for us ever since they had heard the nature of our duty. It was therefore a great disappointment to them when they were told that we were going away immediately. Captain Sander's object having been merely to carry his triangulation from Masira to the mainland and then bear up for Aden, to get fresh provisions, for scurvy had broken out among the crew. I therefore did not see Ghobat Hashish¹ which is the only part of this coast that I have not seen.

Lieutenant Grieve, however, who returned to survey it the following year kindly favoured me with a sketch of it, and some observations on the nature of the surrounding land which will enable me to describe it almost as well as if I had been on the spot.

Returning then to Ras Shijar the eastern point of the entrance to Ghobat Hashish, the coast curves inwards and northwards from it for about ten miles, in a circular form, and then outwards again to Ras Ghidau, the opposite or western limit of this bay, which is eight miles distant from Ras Shijar. In the space thus described which is nearly dry at low water in its inner half, there are three islands, called respectively, Ab, Mahut, and Rak.

Lieutenant Grieve states that Jazirat Ab, which is situated towards the opening of the bay, "is a small rocky islet frequented only by natives for curing fish."

"Jazirat Mahut is a low island" about two miles long by one broad, "covered with Mangrove Bushes ¹ and surrounded by mudflats which are dry at low water. It contains about 130 huts and 500 inhabitants of the Beni Hakiman (Okiman?)². This tribe is scattered over the country from Ghobat Hashish to Suadi, a town about thirty miles west of Maskat. They are numerous but not powerful. Their chief's name is Nassar bin Saed." The Beni Hakiman inhabit the coast as far as Ras Sarab, twenty miles from Ras Ghidau, and from Ras Sarab to Ras Hammar, a distance of twenty five miles, are the Wahebah, after whom come the Janabah again. The Wahebah must not be confounded with the Whebah, they are two different tribes, separated from each other on the coast by the Beni Hakiman.

Leaving Ghobat Hashish, we find the coast running nearly due south for 100 miles, to Ras Jazirah, and curving at the same time a little westward between these points, in scollops, between which again are the headlands about to be mentioned.

The first, after Ras Ghidau at the entrance of Ghobat Hashish, is Ras Mintot, then comes Ras Sarab where Lieutenant Grieve states there are "a few huts with about 100 souls of the tribe of Wahebah whose chief's name is Khalfin bin Ali." After this, Ras Kabret, where there are a few miles of sea-cliff about 300 feet high, the first *bona fide* sea-cliff we have had since leaving Ras el Khabba near Ras el Had. (We have now returned to the white or fawn colored compact lime-stone of this coast, latterly we have had nothing but white loose calcareous sand). There is a break now, after which the cliff is again continued on almost uninterruptedly to Ras Jazirah. Opposite this break is the small rocky island of Hammar el Nafur, about three miles off shore. This island Lieutenant Grieve states, "is about 400 yards long by 300 broad, and 300 feet high, and of a white aspect. The summit is flat and split in all directions. Myriads of shags frequent it, and there is an accumulation of guano on it which is occa-

¹ It is probably from this circumstance that the bay gets its name of "Hashish," *herba*. We took in a cargo of wood from this island, while at Masira, which contained the largest trunks of Mangrove trees I have ever seen.

sionally taken away by the Arabs for the purposes of agriculture." The rock-specimens of this island sent me by Lieutenant Grieve show that it is composed of white lime-stone similar to that of the coast. Next to Ras Kabret comes Ras Kariat which is 280 feet high, and then a table-land on to Ras Markas (480 feet high) and Ras Jazirah.

Hence we see there is a gradual elevation of the land towards the south, and from Lieutenant Grieve's sketch it appears that this commences as far northward as the bottom of Ghobat Hashish, although we do not come to any cliff until arriving at Ras Kabret. We also see by the eastern aspect of this part of the coast, which amounts to a distance of 100 miles between Ghobat Hashish and Ras Jazirah, that this elevation is not confined to the sea-cliff but that it extends inland for at least the distance mentioned. It remains to be seen if this general elevation of the land commencing here, continues. Up to Ras Kabret, with the exception of a few insignificant points, we have had no cliff whatever since leaving Ras el Khabba near Ras el Had; we now come to a table-land at Ras Jazirah which is 480 feet above the level of the sea.

After leaving Ras Jazirah, the land falls back a little and for upwards of eighty miles to Ras Sāgar ¹ is confronted by a low sandy shore out of which is scooped the Bay of Sāgar. From Ras Sāgar which is 622 feet ² above the level of the sea, a cliff is continued on for upwards of thirty miles to Ras Shaherbataht, and Ras Gharau which last is 800 feet ³ above the sea. Next to it, is a little salt water lagoon with fresh water at its inner extremity, and a break of four or five miles. The sea-cliff then recommences at Ras Minji, 706 feet high ⁴ and is continued on uninterruptedly to Ras Shuamiyah, when again the land recedes and is again also confronted for upwards of fifteen miles by a low sandy shore. After which a cliff is continued on almost without interruption to Ras Therrar where it ends, about twelve miles from the south western extremity of Curiyah Muriyah Bay.

From Ras Jazirah to Ras Therrar therefore, a distance of 170 miles, the land has been gradually rising from 480 to 800 feet above the

¹ Chart by Captain Haines.

² Capt. Haines.

³ Id.

⁴ Id.

level of the sea, which it is more or less in Curiyah Muriyah bay; and it may be easily conceived that such an imperceptible elevation, gives it the appearance of a tabular plain the whole way, which is the case. But for the sandy beaches mentioned, and the outbreak of black igneous rocks at Ras Jazirah and at Ras Shuamiyah, the seacliff would have been continuous throughout, and have presented a light white color, a parallelism of strata and an uniformity of surface, almost uninterrupted to the neighbourhood of Ras Therrar. When sailing along it I could not help being struck with its resemblance to that part of the coast of England between the North Foreland and Beachy Head,

“———that pale, that white-faced shore,”

but without a tree and almost a mound to vary the outline; nothing but one continued light brown, barren, arid limestone rock from Ras Jazirah to Ras Therrar.

At Ras Jazirah there has been an outbreak of igneous matter which has upset the limestone strata much, and the little island at its extremity which forms a part of the former, and from which the cape takes its name is composed of serpentine. At Ras Shuamiyah also there has been an outburst of igneous matter but to a much greater extent. Many dykes and dislocations appear here, through which the dark igneous rock has forced its way, and overflowed the surface. Indeed the horizontality of the land generally, begins here to be disturbed.

As I merely passed along this part of the coast, and was not present when it was surveyed, I must refer the reader to Captain Haines' account of it published in the XVth vol. of the Royal Geographical Society's Transactions.

There are no trees to be seen upon it, and no traces of vegetation, saving a few bushes in the sandy plains close to the sea, neither in all probability are there more than the desert-herbs to be found inland. It appears to be totally uninhabited, save by a few Janabah here and there where there may happen to be a little water, as at Ras Gharau, or where these people may be temporarily located during the fair or fishing season; for this is the great fishing coast of the Beni Bu Ali and

Janabah. Some of them make three trips a year from it to Maskat, gaining by each trip fifty dollars.

The southwestern extremity of this barren tract, brings us to the borders of a far different country. One mountainous and woody, fertile and populous, rich in flocks and herds, the region of frankincense and wild honey, in short "Araby the blest." It begins in the southwestern horn of Curiyah Muriyah Bay¹.

On approaching it, while leaving the islands of Jibliyah, Gharzaut, Hallaniyah, Soda, and Haski on the left, we are struck by the sudden elevation of the land, which here rises from 800 to 4,000 feet. I have already mentioned the derangement in the horizontality of the strata which appears to commence at Ras Shuamiyah, and this increases on to Ras Therrar, when all at once the white cliffs are seen 4,000 feet above the level of the sea. The summit of Jibal Hasek, which is within four miles of Ras Therrar, is 4,000 feet above the sea. From this point the line of elevation appears to extend due north, much in the same way as we have seen it between Ras Jazirah and Ghobat Hashish. This is as it were the second step of elevation westward.

From Jibal Hasek, a table-land of the same height, extends northwards and westwards, called Jibal Sabhan, accompanied, as all such elevations are, by deep ravines and huge isolated masses at its circumference. These between Jibal Hasek and Ras Nus, the extreme point of Curiyah Muriyah Bay, are extremely fantastic in their outline.

1 Could Curiyah Muriyah, written خرتان مورتان (el Edrisi) when applied to the islands of this bay, but with the diacritic points altered خريان مريان, be derived from Karah Mhara, كره مهرا? The shores of Curiyah Muriyah Bay are inhabited by these two tribes, and the inhabitants of the Curiyah Muriyah islands speak their peculiar dialect. Moreover Captain Haines (2d memoir p. 136) states that the Khalfan tribe of the Mhara claim this group of islands and visit them once a year; while the late Dr. Hulton (Proceed. Bombay Geographical Society, December and February 1839-40, p. 189) states, that the inhabitants "assert that their ancestors came originally from the neighbourhood of Hasek and Marbat." The islands themselves are named after the nearest places on shore, and from their appearance. Haski from Hasek, Hallaniyah from Ras Hallan near Hasek, Soda from its black color, Jibliyah from its mountainous appearance, Gharzaut perhaps from being nearest Ras Gharau.

Jibal Nus, at the base of which is the cape of the same name, is only 1,200 feet above the level of the sea, and is stated to be composed of granite ¹.

Next to Ras Therrar comes Ras Hasek, and the village of Hasek, both situated at the base of the mountain just mentioned, and between these two capes is the valley called Wadi Rakot, which must be one of the largest on the coast, as it is said to extend seven days' journey inland, to a country and town called Jezzar. ² Hasek is inhabited by members of several tribes, the principal of which are the Karah, ³ Mhara, ⁴ Afar, ⁵ Hassarit, ⁶ and Baramah. ⁷

Five miles south of Hasek, towards Ras Nus, is the tomb of the prophet Houd, Kabar Houd, as it is called. It is situated at the foot of the most remarkable of all the mountainous masses on this coast. This mass consists of a serated mountainous ridge of at least four peaks, each of which is about 3,000 feet high, the direction of the ridge is S.W and N.E. The peaks are called Jibal Habareed, more probably Kabar Houd, from the tomb of Houd lying at their base. The people of Hasek, however, call this the tomb of Sâleh bin Houd. ⁸ Sâleh is said to have lived between the time of Houd and Abraham. Houd was the prophet sent to reclaim the Adites, Sâleh, the tribe of Thamud, from idolatry. ⁹

On rounding Ras Nus, about four miles further on, we immediately lose sight of the even and comparatively low land behind, and open upon a plain of dark igneous rocks in front. This plain which extends to Ras Marbat, and about ten miles inland, is backed by the seaward scarp of the table-land of Subhan just mentioned, which here in the form of an enormous cliff descends almost in one step to the plain below, while at the top are the white lime-stone strata raised three or four thousand feet above the level of the sea.

From Ras Nus to Ras Marbat, which is the next cape, there is nothing remarkable on the shore but the isolated mountain called

¹ Captain Haines, 2d Memoir p. 129.

² Idem p. 131.

³ كره ⁴ مہوا ⁵ عفار ⁶ حسريت ⁷ برصعة.

⁸ Capt. Haines, 2d Mem.

⁹ Sale's Koran, prelim. disc. p. 9.

Jibal Jinjari, which is about 1,300 feet high. It is small and conical, and affords a distinct geological type of the neighbouring formation, from being situated in the midst of the plain of igneous rocks mentioned, and separated for at least ten miles on all sides from any high-land.

The mountainous tract of Sabhan is continued on, under different names and without interruption beyond that of a deep ravine here and there to the N.W. point of the Bay of El Kamar, distant 180 miles from Ras Nus. Some parts of it towards the sea, are perpendicular, but most descend to the sea or maritime plain, called *sahil*, in subranges of mountains or slopes more or less sudden and precipitous.

The summit of this land is said to be almost barren and soilless, presenting hardly any trees beyond that of the frankincense and milk bush, a species of euphorbia, it is called the Nejdî. At a lesser elevation called the Gathan, the tops of the mountains present more vegetation, and still lower are covered with a rich red loam, abundance of long grass, and a variety of shrubs and small trees. While the slopes of the mountains are also thickly wooded with balsamic and other small trees to the Sahil, and sometimes to the water's edge, even portions of the lime-stone rock in the midst of the sea, have old balsamic trees on them. Large herds of cattle are seen grazing on the grass, flocks of innumerable white goats and sheep are seen scattered over the sides of the mountains or following each other in long dotted lines among the crags, and camels are said to be proportionably plentiful.

The habitations of man here, are for the most part, in the rock. They dwell in natural caverns, some of which are of enormous dimensions, and as these are for the most part situated on the precipitous portions towards the sea, their position and number may be distinguished when night comes on by their lights.

From Hasek to the town of Damkot in the Bay of El Kamar, the mountains are inhabited by the Beni Karah, whose chief or representative of their head family, in 1846, was Salim bin Thori bin Kahtan, of the family of Bin Kahtan. Behind the Karah inland are said to come the Thor, then the Mahra, the Afar also a large tribe, and the El Kathiri.

Of the Beni Karah I have given a short description in the Xth and XIth Nos. of this Journal, to which I must refer the reader, merely stating here that they subsist chiefly on milk and flesh, and exchange ghee (clarified butter), hides, frankincense and moql (bdellium), for the few necessities they require.

I passed a day in one of their caverns situated among the mountains a few miles from Takah, a small village on the coast about eight miles west of Marbat. This excursion I will briefly detail, as it will give some idea of the dwellings and life of those who inhabit caves on this coast. The way to it is through the dry bed of a torrent which ends two miles east of Takah in a saltwater lagoon called Khor Reri. After having traversed this for upwards of a mile, in company with the Beduin chief to whose cavern we were going, his brother who lived at Takah and our Arabic Interpreter, we arrived at a point where the torrent bed divides into two branches, the right branch of which is after a short distance suddenly stopped by a precipice about 250 feet high, and the left continued in among the mountains. Having followed the former to the precipice, we scaled this, and on arriving at the top found a grassy plateau about a mile square, circumscribed on all sides by mountainous slopes except towards the sea, where it was bordered by the edge of the precipice mentioned. It was this precipice and this plateau that attracted our attention from the vessel and that induced me to obtain if possible a nearer view of them.

There were many wide-spreading trees on the plateau and part of it was under cultivation. A stream of water meandered through it from which some little negro boys, slaves of the Beduin chief, were conducting off minor streams to irrigate some beds of indigo, onions and corn, while the remaining portion trickled over the precipice. There were also pomegranate, fig, and lime trees there.

As I have before stated, this plateau was surrounded by mountainous slopes on three sides, and about 100 feet up the face of the eastern one was the Beduin's cavern, the arch of which was about 150 yards span; its height about fifty yards and its depth about thirty. In front of it was a fence of brushwood which made the area within large enough to hold 100 head of cattle, which were penned there during

rain or the predatory visits of marauding members of the tribe. The roof of the cavern was hung with stalactites and its margin festooned with creepers.

Here we passed the greater part of the day with our friend the Beduin and his brother, wife and family. There were many recesses in the cavern, partly perhaps the work of man, partly that of nature. In some of these, herdsman and other dependents of the Beduin chief resided; they occupied the opening, while the deepest and central recess of all was occupied by the Beduin's family. This had a raised floor of brushwood, supported on stakes, three or four feet above that of the cavern. The wife of the shaykh of Takah was there for her health; she also had an apartment. So soon as we ascended the platform of brushwood, a persian rug was spread for me and a bowl of milk brought. I passed the day partly in conversation, partly in presenting presents, but principally in prescribing for and in looking at the diseases of people of the cavern, and of others of the neighbourhood who came to see us. The Beduin's wife made one of the party. She was a light colored, fine, handsome woman, but the shaykh of Takah's wife kept herself concealed in her recess although she talked to us out of it.

When the heat of the day had subsided, we descended to the plateau, and walking towards its inner part came to a long irregular canal or lake which they called Khor Darbot. Its widest part was about thirty yards, its depth about twelve feet, and its length about a mile and a half. Trees spread their branches over some parts of it, and here and there tall bull-rushes bordered it. A number of waterfowl were reposing on its surface, and many head of cattle belonging to the Beduin, grazed on its banks. Every thing appeared peaceful and quiet. But the watchful eyes of the armed Beduins who were with us shewed how every thing might in a moment be reversed.

Having reclined for a short time under the shade of one of the trees, while the Interpreter who was a Persian, bathed and said his prayers, we then walked to the western extremity of the canal, where we found the little stream which I have mentioned, issuing from it, and the sun having set, to us at least in this mountain dell,

we turned our steps towards the corner of the plateau by which we had entered. On our way, we passed a great cavern, which had recently fallen in, and whose occupants, like their opposite neighbours might have tenanted it for generations, but had been compelled at last to seek another abode. When we arrived at the corner of the plateau I took a final glance at this pretty place, and with the rest of the party descended to the torrent-bed beneath. From thence we made for the shaykh's house at Takah, where we arrived somewhat after dark, and having related to him the adventures of the day, got him to put us on board the "Palinurus" in one of his boats, where we arrived about midnight.

Both the shaykh of Takah and the Beduin chief, did all they could to prevail upon us to stay at their respective dwellings, but circumstances prevented us from accepting their hospitality.

Having now described the habitation of a Karah in the mountains, let us descend to the plains on the coast, (here called *sahil*), of which there is only one between Ras Nus and Wadi Shagot at the bottom of the bay of El Kamar. This is eighty miles long, and extends from Ras Nus to Ras Resut, after which the mountains slope to the sea in precipices or shelving steps all the way to the valley mentioned.

Commencing then with the village of Marbat, which was the starting point of Captain Haines' survey towards the N.E., and that of Captain Sanders' towards the west, we find it situated at the bottom of a little bay of the same name which is protected by the low cape of Ras Marbat already mentioned. This cape is the western extremity of the tract of low igneous rocks which first opened upon us on rounding Ras Nus.

The village of Marbat contains about twenty houses, and 200 inhabitants, of the Beni Karah tribe. Around the houses are ruins of others of a more ancient date from which the newer ones appear to have been constructed. This is commonly the case with the villages on this coast. The original material appears to have served for ages, and in the walls of a miserable habitation may frequently be found stones which have had a better place.

Many of the Karah who dwell in the plain around Marbat have nothing beyond the shelter afforded by the overhanging sides of watercourses, under which whole families reside. Clothes they have little or none, neither have they any arms, and their food consists almost entirely of shell and other fish which they grope out from among the rocks on the coast.

Little as this may appear to accord with the great advantages of this district, it is nevertheless true, for ample as its resources may be to supply the wants of man, the Karah of the plains are so divided among themselves, and so subject to the predatory descents of those who live in the mountains, that the solitary inhabitant of the dreary waste we have just passed, leads a life of more security and comparative happiness than the richest man in the plain we have now come upon.

Many of the Karah of Marbat serve on board Arab Bagalos which trade to India, Africa, and other parts of their own country. Marbat is a common place for vessels sailing along this coast to water at, although the water is so brackish that it is hardly drinkable, at least to those who have been accustomed to better; but about four miles west of it, there is a mountain rivulet of excellent water, which descending to within a few hundred yards of the shore, enabled us to replenish our tanks there.

On the inland side of Marbat are some granite rocks about 100 feet high and behind them is the Burial Ground of the village. There are several old tombs in it, in ruins, and one bearing the date A. H. 557. Many of the Karah are buried here, and they still keep up their old custom of killing a bullock over the grave of the deceased and distributing the meat to the poor who may have assembled to receive it. There is also a stone close by the Burial Ground which marks the place where the greater part of the Karah of this district bring their children to be circumcised.

Beyond the granite rocks, inside this again, is the debouchement of a great mountain torrent which during rainy weather, that is in the S.W. monsoon gathers the water from the neighbouring parts of the Subhan mountains, and pours it into the bay of Marbat. It was stopped up by

a sand bank several feet high which had been formed by the torrent on one side, and the sea on the other. The bay of Marbat is open to the S.W. monsoon.

Proceeding from the debouchement of this torrent-bed on towards the village of Takah, already mentioned, a distance of about eighteen miles, we find a narrow *sahil* between the base of the mountains and the sea, the whole way. For the first four miles it is nearly on a level with the sea, but afterwards it rises to the height of 100 feet, which it maintains with the interruption only of a mountain torrent-bed here and there, all the way to Khor Reri, the lagoon which I have stated to exist two miles east of Takah. After this it is continued on with a sea-cliff of the same height for about a mile, when it sinks into the famous plain of Dofar¹, which is but a few feet above the level of the sea, and at which we now arrive.

The village of Takah before mentioned, is situated about a mile beyond the termination of the sea cliff, and consists of a few mud and stone houses, surrounded by heaps of stones as the houses at Marbat, the remains of former buildings. On the bluff which terminates the cliff are also the remains of some old houses, and the shaykh of Takah told us there were others in the neighbourhood, but that there was no traditional history connected with them further than that they had been erected by a family called Min Gui, the same people who built the city of El Balad now in ruins in Dofar, of which hereafter.

Between Takah and the cape called Ras Resut, before mentioned, a distance of about thirty miles, is the fertile plain of Dofar, raised but a few feet above the level of the sea. This plain, which is by far the most favored by nature on this coast, is bounded on one side by the sea, and on the other by a deep incurvature of the mountains. Its eastern extremity, which is about three miles wide opposite Takah, passes into the narrow strip of *sahil* mentioned, and it terminates westerly in a *cul de sac* between Ras Resut and the great mountainous tract of the coast, while it extends backwards in its deepest part from ten to fifteen miles.

¹ ظفار.

There are several fresh and saltwater lagoons in this plain. The former seem to be formed from fissures in the ground opened by some terrestrial convulsion, and are all filled with water to the brim; the latter are at the debouchements of water-courses which pass across the plain to the sea.

The soil of Dofar is rich, and the remains of agricultural marks shew that at different periods it has been generally under cultivation. When the coast line of this plain was being surveyed in 1844, large tracts of it were covered with maize and millet. There are also several groves of cocoanut trees on it which yield large nuts.

For the protection of the cultivated parts, towers have been erected, from which watchmen discharge their matchlocks on the approach of suspicious characters. But this I am told is of very little use, for the inhabitants of the mountains who are the principal depredators in this case, linger about during the day at a distance with their flocks or herds, and when the night comes, turn them into the young corn and eat the whole down in spite of every thing. This but too frequently ends the labours of the industrious inhabitant of Dofar, who has no appeal, nor dares interfere with the impudent intruder, a hair of whose head if injured, would bring his whole clan down upon the unfortunate agriculturist, under pretext for further dispossessing him.

Hence it follows that the greater part of this fertile and well watered plain remains uncultivated, and most of the inhabitants reduced to the greatest want, from their almost inevitable issue of their labours. I have seen men going to till the ground here with their sword in one hand and their hoe in the other.

The towns of Dofar are congregated about its centre, near the sea, probably for mutual protection. They are five in number, viz. Dairiz, Sillalah, El Hafah, El Robat, and Aukadh. The three former are situated around the ruins of an ancient city now called El Balad on the sea shore. Of these ruins I have given a full description in the VIth Vol. of the Journal of the Royal Geographical Society, also in the Transactions of the Bombay Geographical Society Vol. VII. and must refer the reader to it for more information on the subject. El Robat is a little distance inland towards the mountains and has been

deserted on account of the continued predatory visits of the Karah, while Aukadh is on the coast a few miles west of Sillalah.

The inhabitants of the plain of Dofar are partly Karah and partly El Kathiri, and so deeply involved in blood-feuds that there are hardly two people among them who are not afraid to pass each other. Scarcely an inhabitant of one town dares go to another without a protector, called a *rubiya*, who is bound to take upon himself the insults offered to the man whom he protects. But these seldom amount to any thing serious, for the *rubiya* being friends with all, few will open a blood-feud with him for the sake of being revenged on the man whom he protects, hence the latter is able to transact his business and return to his home with perfect security.

The inhabitants of this district, therefore, live in a most frightful state of anarchy. They are in constant fear of each other and in terror of a descent of the Karah from the mountains. Indeed their condition is as unhappy as can well be conceived, and this they bear in their countenances. Not only the people of the plains but the principal people of the mountains are extremely anxious for the protection of a good government. The former hailed with delight our arrival there hoping that it was the object of the "Sirkar" to take possession of the country, and so persuaded were they of this, from the wish being father to the thought, that one of the principal shaykhs, a Karah chief, (with whose brother I had resided a few days during our first visit to Dofar), told me in confidence the number of men he could assemble at a short notice and his willingness to place them at the "Sirkar's" disposal. This was the shaykh of Aukadh, a good old man, but depressed in spirit, and worn down by the intestine quarrels of his tribe. He took me into the farthest recess of his house to make this confidential statement to me.

I passed a few days at Sillalah in 1845 and in 1846. The first time with the brother of the old man just mentioned, and the second in company with Lieutenant Grieve at the house of a Sharif named Saiyad Tahr who was a merchant, trading to Bombay and other ports. During the last time I saw the head chief of the Karah, Salim bin Thori bin Kahtan, to whom I have already had occasion to allude.

It was he who killed in a blood-feud, fourteen years before that time, the last Governor of Dofar, Saiyad Mohammed bin Akil. He with other members of his family, all tall, fine looking people, the finest Beduins indeed I ever saw, had come down from the mountains partly to see us, and partly on business with Saiyad Tahr. They wanted us much to return to the hills, and pass the monsoon with them. One day I saw Saiyad Tahr make an exchange of three or four yards of blue dangaree (cotton cloth) with Salim bin Thori for a couple of bullocks, and on observing that it was a good bargain, the Saiyad replied "but who will buy the bullocks?" this remark was quite sufficient to disabuse me of the idea, had formed respecting the advantage gained by the Saiyad.

During the S.W. monsoon, the wind and waves and sand are said to render Dofar so disagreeable, that the principal inhabitants retreat to the mountains, where they would appear to have estates and cattle.

They all as well as the Kahtan family pressed us to pass the monsoon with them, intimating that we were tempting Providence to leave the bay of Resut at that time, viz. the month of June. This would have afforded us excellent opportunities of becoming better acquainted with the life and habits of the Karah in their mountain recesses, and no doubt with the family of Bin Kahtan, we should have been perfectly safe, for it is stated that fifty of the Kahtan family are enough to put to flight the whole of the Beni Karah.

The plain of Dofar after the rains is said to be covered with an incredible number of sheep and cattle. Horses they have none, or not more than half a dozen, miserable creatures.

In several parts of the plain of Dofar there are ruined towns like those of El Balad. They amount to six in number, and are said to have been built by the Min Gui, of whom, see the description of El Balad to which I have alluded.

Passing on to the westward, we come to the bay of Resut where the plain proper of Dofar ends; for the *sahil*, though continued on in the form of a *cul de sac* for some distance, becomes broken up and

elevated upwards of 100 feet above the level of the sea. The coast line at the end of the plain proper, curves southward, and running for, a little towards the S.E., then turns again to the west, to form the cape of Resut, inside which is the bay and bunder of the same name. This bay affords safe anchorage to small vessels during the S.W. monsoon. The "Palinurus" remained there from the 25th May to the 3rd June 1840, and the bay was perfectly calm, though the southwesterly swell was rolling past the cape with nearly the whole force of the monsoon. There was also a large Bagalo laid up there for the monsoon, belonging to our friend Saiyad Tahr, and half a dozen boats belonging to Mharah fishermen, who had come from Saihut and Damkot, to fish for shark, which abound in the bay of Resut during the S.W. monsoon.

The premonitory swell of the S.W. monsoon called *tadbir* had commenced long before we had arrived and was gradually increasing. Its duration was said to be about twenty days when the *karif* or S.W. monsoon, fairly sets in. This varies a little but was expected when we were at Resut, on the 10th or 12th of June. The only fear in the bay of Resut is about ten days before the *karif*, when they say there is sometimes a gale from the S. or S.E.

In the comparative geography of this coast the bay of Resut will be found of much interest, for being the only one of the kind hereabouts which answers to the description of the Author of the *Periplus*, who states that sailing along this coast from Malabar or Broach, vessels when too late in the season put into a bay here for the monsoon, ("*quæque (naves) à Limyrice aut Barygazis veniunt eo deferuntur, sero anni tempore hyemen ibi traducentes,*") we are enabled to obtain the identity of a point which is most desirable.

At the bottom of this bay is a sandy beach about a mile long separated from the plain of Dofar by a few hundred yards of low sea-cliff. It is backed by a ridge of sand of the same extent, within which comes the khor or lagoon of Resut. This, which consists of several pools of stagnant salt water, intergrown with mangrove bushes, tamarisk and *salsola*, is the debouchement of a large torrent bed, which coming through the *cul de sac* mentioned, gathers the water during the rains from the neighbouring mountains and pours it into the bay of Resut.

It is probable that this lagoon becomes much extended during the rains, when it must overflow or pass through the sandy bank which during the fair season separates it from the sea. I do not know if they have much rain during the monsoon in these parts but they have some. About a mile up this torrent bed is a bubbling spring of brackish water, but drinkable, and half a mile still further on another perfectly fresh. This torrent-bed corresponds with the one which we have seen at Marbat, in collecting the water from the neighbouring mountains at this end of the plain and pouring it into the bay of Resut.

The small cape which shelters the bay of Resut from the S.W. monsoon, is the commencement of a low scarped ridge, which extending westward about ten miles meets the main tract of mountains as the latter advances southward to form the great promontory called Ras Sajar. It is between this ridge and the mountainous tract inside it, that the *cul de sac* is, which forms the western extremity of the district of Dofar.

The cape of Resut is about 200 feet high and about a mile broad at its base, and prolonged into the sea by a little island or rock from which it is separated by an interval of a few yards. It is composed of the white and gray limestone of the coast and is much scarped, and irregular on the summit from denudation.

On its extremity are the remains of a small round tower of rude construction and also those of buildings equally rude.

About half a mile from the latter, still on the ridge of the cape, comes an ancient Burial Ground extending over an area of three acres. The graves are marked by nothing but a circle of large boulders, surrounding a heap of loose stones or what formerly was a heap of stones sunken in the centre. The larger of these graves measure from six to twelve yards in diameter and are raised two feet above the level of the plain. They are formed of boulders of white and gray limestone gathered from the immediate neighbourhood. Around the large graves are smaller ones looped on to their circumference, indicative of successive additions to them of less distinguished members of the family or tribes, perhaps, unless all perished in battle and were buried at the same time. No one could give us even

a traditional account of these graves. We endeavoured to raise the stones from the centre of one, but after descending about four feet and a half below the surface they became so large and so locked in that although we had three or four stout Sidis with us and a good crowbar we could not move them, and had we succeeded, the chances are, from the hurried manner in which we were obliged to make our examination for fear of being surprised by the Beduins, that we should have found little to have rewarded us for our pains. Besides the Burial Ground and the ruins mentioned, there were the remains of buildings in all directions about this cape, although there is not a human habitation now within ten miles of it. Hardly any of these remains amounted to more than a few stones which mark the area occupied by the original building.

The graves as well as the heap of ruins at this cape were overgrown with the moql tree and its companion the *balsamodendron pubescens* of Dr. Stocks, also the miswak which threads its way abundantly through the crevices between the boulders. In many places the trunks of the former measured four or five inches in diameter, and their branches growing horizontally from their exposed position, had extended completely over some of the graves. This shews that both graves and trees must be very old.

For the sake of those who may hereafter visit this neighbourhood I may mention that, though presenting many objects of interest, it is most unsafe; each time that we were there, parties of officers who had gone on shore were shot at. In the first instance the party was about seven miles from the shore, up the bed of the torrent mentioned and but for the presence of a Karah guide who kept the assailants at bay while the party made the best of its way back to the shore, one or more would have been wounded if not killed on the spot. In the second instance, a party who had gone to some rocks to gather oysters were surprised and shot at, and but for the impatience of the assailants in commencing their attack, one or more here would have been wounded or killed; as it happened, they had not lowered their sail and got off with merely a part of the gunwale of the boat shot off. This party of Beduins had come down from the mountains to intercept the return of Lieut. Grieve, myself and others, who had been on a visit to the Saiyad mentioned, at Sillalah.

Having however got intelligence of their design and having been persuaded to stay another day, we did so, and eluded them. The Beduins were probably not prepared with water or provisions to stay longer than the day on which they expected us and so discharged their matchlocks upon the party who went to gather oysters, after which they might have returned to the mountains, at least we saw nothing of them the next day.

The Mahrah fishermen at Bunder Resut were always obliged to have a protector or *rubiya* with them. An old Karah always accompanied them to the spring up the torrent bed when they went to fetch water.

It is quite possible to go about this place unprotected for many days together without seeing a single human being, as I have learnt from experience, but the risk is very great and the people so bad that they would shoot a man from a distance merely for the chance of his possessing anything worth having.

From Ras Resut the sea-cliff again commences and extends westwards for twenty-three miles to the mountainous tract extending outwards to form Ras Sajar.

There is nothing remarkable in this cliff the base of which is washed by the sea the whole way, except the peak of Ras Hammar, which is the highest point of it, this is 700 feet above the level of the sea. From the summit of these cliffs the land slopes inwards to the *cul de sac* mentioned, and its highest parts are covered with a coppice of small gum trees, such as I have mentioned to exist at Ras Resut.

The junction of this cliff with the promontory of Ras Sajar brings us again to the great mountainous tract which we left on the sea at Ras Nus, and which there, was known by the name of Subhan, but here is called Sajar.

Ras Sajar is the largest cape on the S.E. coast of Arabia though not the most striking; it is not a long projecting cape but of stupendous magnitude and height. Although Ras Fartak appears to be as grand in its dimensions as a cape can well be, yet the ridge of Ras Sajar exceeds it in height by nearly 900 feet. The summit of Ras Sajar is by trigonometrical measurement 3,380 feet above the level of the sea and its bluff extremity 2,770 feet, while the ridge of

Fartak is only 2,500 feet and the scarped portion towards the bay of El Kamar 1,900 feet.

The eastern side of Ras Sajar, which is not so high as the southwestern, on account of the strata dipping towards the east, is perpendicular scarped and its base is concealed by the debris of superincumbent masses of limestone which have rolled over or fallen from its summit. The southwestern side however is not perpendicularly scarped, but descends in three or four grand steps to the sea, the ledges of which are so narrow that from our station within half a mile of the base we could see the summit. The bluff extremity of the cape is perpendicular to the water's edge.

All round Ras Sajar the soundings are very deep, but particularly at its extremity and southwestern side, at these parts no bottom was found at 100 fathoms a mile off shore, while the next throw of the lead landward might strike at 60 fathoms. This shews the gigantic steps with which the land here decends even after it has passed into the sea.

We anchored in 60 fathoms, within half a mile of the shore, on the southwest side; it was our last station working eastwards. The wave off the shore here was half as high as the wave on and the wind in like manner. This was of great assistance to us in getting off, for both the southwesterly swell and the southwesterly wind had commenced, and we were on a lee shore.

Where the sides of this cape are not perpendicular they are covered with trees, and the plains above with long grass. We observed more caverns on the eastern than on the western side of this cape, in the way I have before mentioned, viz. by their lights at night.

From Ras Sajar to Ras Fartak, a direct distance of 105 miles, the coast was surveyed by Lieut. Grieve. The distance between Ras Resut and Ras Sajar is about twenty-six miles.

On the southwestern side of Ras Sajar, about six miles from its extremity, is a deep ravine running northwards, called the Kais ibn Othman. At its opening is the village of Safgot consisting of one large house and a few small huts with the usual heaps of stones, the remains of former buildings, around them. The shaykh of this valley (May 1846.) was a fine old man by name Saiyad bin Othman

el Sadoni. He was said to be very rich in flocks and herds, being possessed of 200 camels, upwards of 500 head of cattle, and 1,000 sheep. We had not an opportunity of landing at his place but he sent his boat off to enquire if we wanted anything, and afterwards came to Sillalah to see us, and finally on board the "Palinurus." He was excessively desirous of not being passed over, having heard that we had visited other chiefs before him on the coast, and therefore travelled over the great promontory of Ras Sajar to meet us in Dofar. It was this old man who told us confidentially at Sillalah, that the Karah intended to intercept our return to the vessel.

Close to his romantic valley is another similar one, called the Kais ibn Ammar. Its direction also is northward and it is separated from the former by a mountainous ridge scarped upon the sea. At its entrance also is a village, called Rakot, consisting of about half a dozen houses and about 50 inhabitants. The shaykh of this village and valley (May 1846) was an elderly man by name Said bin Ammar, I passed a day and a half with him.

In the evening of the day I landed, he took me for some distance up his valley the sides of which were thickly wooded with small trees, among which he pointed out two leafless ones apparently acacias, from which gum arabic was gathered. The gum which was shewn me was clear and colorless, not the so called gum-arabic which comes from the Somali coast, and which has a tinge of yellow. There was also the moql tree there, the gum of which they call *tabka*; its companion also the *balsamodendron pubescens*, and another balsamodendron which is common to this coast, even to Aden, and yields a gum which is chewed, called *liban dokat*, when the bark of this tree is cut the juice flows forth like milk. The *Sibroot* tree was there (a species of Euphorbiaceæ?) yielding a red astringent gum like kino, and which the Arabs mix with *subr* (aloes) to use as an external application for sore eyes, wounds &c.—the *nerium obesum* so common on the limestone rocks of this coast, and a thousand other small trees for the most part leafless. Drawings of some of these with specimens of their gums were forwarded to the Hon'ble the Court of Directors in April 1848.

After the shaykh had pointed out everything which he thought

interesting in his valley, particularly a crevice in the ground between some limestones whence he said during and after the rains issued a great stream of water, and of which he wished to know the explanation, we arrived at a large tamarind tree, into which he climbed and threw me down some of the dried fruit, stating that it was the largest tree and bore the best fruit of any in the neighbourhood, also that the Beduins in their ascent and descent of the mountains halted under it and refreshed themselves with its fruit. The polished state of the blocks of limestone under the old tree and the remains of fire places bore ample testimony of this.

Night coming on we returned to his house and after partaking freely of boiled kid, rice, and dates, retired to the house-top to pass the night.

It was to this place that a Mahrah had come all the way from Damkot, sixty miles off, to get me a branch of the frankincense tree in flower, in hope of being rewarded for it by a small present. It took him twenty-four hours to get it and he went back rejoicing with a dollar.

A little further, westward of the Kais ibn Ammar comes a third ravine or valley, which has a west northwesterly direction. It is called Kharifot and has a stream of water running through it. It appeared rich in vegetation and at its entrance was a large grove of date-trees.

These three ravines are all close together and within fifteen miles of the extremity of Ras Sajar. There is only one more of the kind throughout this range which is Wadi Shagot.

Next to the ravine of Kharifot, which is separated from the Kais ibn Ammar by a low mountainous ridge covered with long grass and stunted trees, and scarped upon the sea like that separating the latter from the Kais ibn Othman, comes a place called Shalgot, where the summit of the highland falls considerably back and afterwards descends in long shelves to the sea. These shelves are covered with grass and trees. We saw a date-grove there and a great many cattle.

After a few miles the upper line of the coast again comes forward and the slope becomes more sudden, to form the cape called Ras Tharbat Ali, which is considered the eastern limit of the bay of El Kamar.

From Ras Tharbat Ali to Ras Fartak is considered the extent of the bay of El Kamar, and within these limits there is no cape of any consequence. The highland continues on from Ras Sagar under the name of Jibal Kamar, and borders on the sea from Tharbat Ali southwestwards for about thirty-five or forty miles without *sahil*, when the coast-line curves round, a *sahil* commences, and the mountainous range continues on in its original course. From the point where the coast-line leaves the mountains the land continues low, on to within twelve miles of Ras Fartak, where it meets the range of mountains which extends southwards to form this promontory.

Returning to Ras Tharbat Ali, we find this cape does not project so much into the sea, it is the acute angle which is formed by the falling back of the upper line of the coast that follows it, eastward, which gives it a prominence, rather than any anything else. This cape is said to terminate westward the coast-line of the Beni Karah.

From Ras Tharbat Ali which is about 200 feet above the level of the sea, the land gradually increases in height to Damkot¹ the next place on this coast, where it is 3,000 feet high. Throughout the greater part of the way it slopes from an almost unbroken outline above, in shelves, clothed with grass and small trees almost to the water's edge. This part is called Jibal Kamar or Shaher.

On approaching Damkot, the slope from the summit of the high land becomes more rapid; it also becomes more broken, and ends before arriving at this place in being both mountainous and precipitous. Opposite this part too, the soundings are very deep. We were anchored in twenty-eight fathoms about a mile off shore and about half a mile further out there was no bottom at 220 fathoms.

We now come to Damkot, the principal sea-port, indeed the only one, in the bay of El Kamar. This is the eastern limit of the coast-line of the Mahrah. Between Damkot and Ras Tharbat Ali the ground is said to be neutral and inhabited both by Karah and Mahrah.

Damkot (in lat. 16° 34', N. and long. 52° 52' E.) is situated on an irregular sandy plain about a mile square, and bounded on all sides except towards the sea by almost inaccessible mountains. Behind

¹ دَمَكُوت, Would not these names of places terminating in *kot* or *ot*, be better spelt *ghot*, غوط, *terra cava depressiorque*?

it there is a tortuous ravine which leads up to the highland above, but it is so insignificant in point of size that it would pass unnoticed if not purposely sought for. In front a tongue of land extends outwards from the beach which ends in a reef of rocks on which the waves break 250 yards off shore. This divides the little beach into two parts, the eastern half of which admits of safe landing for boats when the south-westerly swell is not very heavy, while the western is almost unapproachable at such times. A small stagnant salt-water khor or lagoon exists on the west side of the plain and around it are a few miserable looking date-trees.

The plain of Damkot is sandy and uncultivated and the sides of the mountains are barren for upwards of 1,000 feet, above which they are covered with grass and small trees and bushes, such as have been before mentioned.

There are about ninety flat-topped mud-houses at Damkot; about thirty on the west and about sixty on the east side of the khor or lagoon. The remains of an old round tower built of mud and stones are situated on a bluff about two hundred feet high above the western part of the town.

There is a very extensive Burial Ground there, in which are many ancient graves similar to those at Ras Resut; that is, consisting of beds of stones encircled by large boulders, while the more modern ones have ridges over them marking the longitudinal axis of the body laid beneath. The latter most probably commenced with the introduction of Mohomedanism, the former being the graves of the old Pagans.

Allowing six souls to each house the fixed population of Damkot would amount to about 540. But there are many more than this there during the fair season, when the Beduins from the interior bring their gums, hides and ghee to exchange for grain, cloth and other necessities.

During the S. W. monsoon almost all retire to the mountains. The population consists principally of Mahrah, but there are a great many Karah, and they seem to mix very freely together. The latter call themselves Koreysh so did the Beni Ammar at Rakot. Karah and Koreysh therefore would seem to be synonymous.

The inhabitants of Damkot have about forty boats all of which are light and rudely built, sewn together, but well fitted for their rough shore. In the fair weather they are chiefly employed in shark fishing. The seer-fish is seldom met with here.

We obtained a good supply of sheep at Damkot, also a bullock or two, but the beef on this coast is execrable in flavor, and the cattle so wild and so savage that when brought on board they dash from side to side, and try to bite and kick every thing that comes near them.

The route to Hadramaut from Damkot is not up the ravine mentioned at the back of the town, but by sea to Ghraidah¹ first, a place situated inshore, a little further on.

There is a wildness about the neighbourhood of Damkot and an oldness in the appearance of the place, together with a peculiar expression about the people whom I saw there, that gave me the impression, whether from association or reality I know not, but I think from the latter, that it was the most ancient looking place and people I had seen on this coast. Doubtless the place is old and the people have never had much intercourse with strangers, for it is the only sea-port of this district, and the produce of the surrounding country has probably ever been very trifling.

The mountainous land extending for eight miles westward from Damkot to the ravine-like Wadi Shagot before mentioned, is called Hadthob. Like that about Damkot it is more or less precipitous towards the sea, and divided by depressions above into domed shaped summits, which are covered with grass and small trees such as have before been mentioned. There are many caverns also in the precipitous parts towards the sea and many of them inhabited, as we could see at night by their fires.

Wadi Shagot, which is the last remaining ravine in the bay of El Kamar, ends upon the coast by a narrow opening, but seems to expand out interiorly.

Opposite this valley, the *sahil* or sea-plain again commences, by a narrow slip of sandy beach, the margin of which tends slightly southwards; while the mountainous range continues on in its original

course south-westward, under the name of Fattak,¹ that is after the opening of Wadi Shagot.

Behind the mountainous land of Hadthob is said by the Mahrah to come that of Heiden² and north of this the land of Akaf, *aradh el hagaf*, as they call it.

From the commencement of the sandy slip of beach the coast-line curves round from W. S. W. to S. and continues low to a place called Khalfot, about fourteen miles north by west of Ras Fattak, and about fifty miles from Wadi Shagot. The land both on the coast and inshore as far as the eye can reach, westward, seems hardly anywhere to exceed 100 feet above the level of the sea. At Khalfot it meets the lower hills of the Fartak range. This range after a course of six miles north by west from the extremity of the cape suddenly turns westward, and afterwards seems to run parallel to the Fattak range. The lowland which intervenes between the two, the "ghob el Kamar" of Edrisi, is continued on westward as far as the eye can reach, without any alteration in the general level of the country or any appearance of the "moon-shaped mountain" at the bottom of it which that author has described.

In some parts of the coast-line the land is scarped on the sea, while in others the scarped part is more or less inland and gives place in front to sandy plains intersected by shallow lagoons.

There is hardly a trace of vegetation to be seen throughout the whole of this uneven lowland. It appears, with the exception of a few desert herbs, to be entirely barren.

At the point where the coast-line turns southward from its former direction is the little village of Arnub, where there are a few date-trees, and a few miles further inland under the Fattak range is the town of El Ghraitha already mentioned, around which also are some date-trees and apparently a little cultivation.

It is by El Ghraitha that the people of Damkot go to Hadramaut as before stated. Every third or fourth day when there are a sufficient number, a *kafilah* is said to leave this place for the province of Hadramaut. The journey is stated to occupy fifteen days and the

¹ فٹک

² حیددان

road to be nearly level all the way. The course is S.W. over the lowland between the Fattak and Fartak ranges, and the only annoyance said to be anticipated is a plundering attack from the Mahrah Beduins. There is no other territory between El Ghraitha and Hadramaut but that belonging to the Beni Mahrah.

Between Arnub and Khalfot there are only two little villages called respectively Hirot and Dthabot.

At Khalfot there is a saltwater lagoon about 300 yards long with two fathoms of water, where three or four Bagalos are laid up during the S.W. monsoon.

Immediately after this the land begins to rise rapidly to the ridge of the Fartak range which is about 2,500 feet high; this runs southwards to the cape and westward inland. Khalfot is just at the outside of the bend.

The sea-cliff, which at Khalfot is about fifty feet above the level of the sea, also increases rapidly in height with the land, and soon arrives at a perpendicular escarpment of 1,900 feet which it maintains on to the summit of Ras Fartak. The upper line of this cliff corresponds in its irregularity to the depressions and elevations at the summit of the range while its base is concealed by the sea. It is by far the grandest escarpment on the S.E. coast of Arabia, indeed I expect there are few which can compete with it anywhere in this respect, being uninterruptedly perpendicular from top to bottom for an extent of six miles from the cape. Although its surface appears perfectly smooth yet it is so deeply weather worn into shelves, that men live on them and descend by them to within a few feet of the sea below. We saw these people, never without their swords even in such places as these, fishing from the lower shelves, and in the evening, their fires in different parts of the cliff. It was terrific to behold their position, but in all probability the enormity of the masses prevented us from forming a just estimate of the width of the shelves and the risk they ran; they might have had plenty of room where we thought they could hardly stretch themselves out at full length. Our Pilot however who was a Mahrah from the village of Haswel (el Suahil?) close by, told us that it was a very common thing for them to fall over and be drowned.

No part but the summit of this range presents any vegetation and this is chiefly seen on the western side, where the range gradually slopes to the plain below. Indeed the barrenness of the Fartak range generally, as well as that of the land on each side of it, seems to shew that we have left the part of this coast which catches the rain of the S.W. monsoon, for I can hardly think there is much difference in the soil. It was here, though, on a portion of the face of the cliff which had fallen down, on the eastern side towards the bay of El Kamar, and had made a heap of rocks projecting above the surface of the sea at the base of the escarpment, that I first saw the frankincense tree in leaf. The seed or tree had been brought down with the white limestone mass, which seemed to have slid from the face of the cliff. It was growing out of a crevice of the bare rock according to the habit of this tree.

We now arrive at the extremity of the Fartak range, called Ras Fartak, which next to Ras Sajar is the highest and largest promontory on the S.E. coast of Arabia. Like Ras Sajar, it is scarped to the sea on its eastern, and slopes rapidly to the plain on its western aspect. It is not perpendicular at its extremity as Ras Sajar, but descends so gradually that its base is extended southward a mile beyond its summit. The real extremity of the cape is not in the direction of the ridge, but to one side, where the coast changes its direction from south to west or to south-west. It is this sudden turn connected with the presence of such a high and narrow range isolated from all other mountains, that makes this cape, although it is not the largest, the most striking on the S.E. coast of Arabia. As I have before stated, the Fartak range extends backwards from the cape north by west for about six miles after which it suddenly turns westward. At the extremity of the cape the range is about two miles wide at its base and a short distance inland it spreads out to about double that extent, but it continues narrow to its bend.

It was on the extremity of this cape that I saw for the first and only time a balsamodendron, if not the same, closely allied to the specimen of the myrrh tree figured by Nees ab Esenbeck (*Plantæ Medicales*). A sketch of it was sent to the Hon'ble the Court of Directors with the others before mentioned. I made repeated enquiries after the

myrrh tree on this coast but never could obtain any information of it. All said that it did not grow there.

From Ras Fartak to Ras Sharwen,¹ the next prominent headland, a distance of about 58 miles, the coast runs W.S.W. and for the most part is only raised a few feet above the level of the sea. This distance may be again divided by an intervening cape called Ras Darjah² situated a little to the west of midway between Fartak and Sharwen. Between Ras Fartak and this cape, a distance of twenty-five miles, there is a sandy plain raised a few feet above the level of the sea, and a few villages on it near the latter, which, with their cultivation are protected from the wind and spray by a sand-bank about fifteen feet above the brow of the beach. Close under Ras Fartak are some mud-huts called Khaiset, after which on the coast come the villages to which I have alluded, viz. Kadifot, Haswel, and Sakar; and inland in the internal angle of the Fartak range, to which the sandy-plain extends, is the town called Wadi. This low coast is continued on about W.S.W. for fourteen miles to a small saltwater lagoon called Khor Makshi, when it curves round to the S.E. and then S.W. again to form the step-like cape called Ras Darjah.

This cape which is about 200 feet high and scarped on all sides, is the S.E. point of a group of low rocky mountains which extends inland to join the lower hills of the Fartak range, and also along the coast to the plain of Kashn³, around which they wind inland to the high isolated mountains behind this place, called Jibal Jahun.

Inside Ras Darjah is a shallow bay with a rocky reef or island in it just peeping above the surface of the water.

From Ras Darjah the sea-cliff is continued on diminishing in height for four or five miles, when it, with the elevated land adjoining becomes concealed under a large tract of sand which is continued on to the plain of Kashn.

The high mountains inland north of Ras Darjah which seem to be the continuation of the Fartak range or tract, after it has turned to

the westward, are called Jibal Adim, and those behind the plain of Kashn, Jibal Jahun.

For a description of Kashn I must refer the reader to Captain Haines' 2nd memoir; and for further observations on the Mahrah of the coast with a vocabulary of their dialect, see No. XI of this Journal p. 340.

From the plain of Kashn, which is bounded on the S.W. side by the mountainous tract extending out to Ras Sharwen, the coastline curves round to the S.E. until it arrives at this cape, where it again turns to the S.W. The plain of Kashn accompanies it in a narrow slip to within two miles of the cape, where the land becomes precipitous to the water's edge, and gradually descends from 1,800 to 200 feet which is the height of the extremity of the cape. The curvature thus formed by the coastline gives rise to a small bay called the bay of Kashn.

A short way inside the cape is that part of the bay which is protected from the south westerly swell, and where Bagalos belonging to the inhabitants of Saihut and Kashn are laid up during the S.W. monsoon, *close to the shore*, it is called Bander Lask. This brings us to Ras Sharwen which, if Ras Sajar and Ras Fartak be remarkable for their magnitude, is not less remarkable for its peculiarity, which consists in the presence of two natural pillars on its summit, that may be seen sixty or seventy miles distant.

The bluff of the cape is as before stated not more than 200 feet above the level of the sea, which is ten fathoms deep close to it. It is scarped on all sides, but more particularly towards the sea, and is formed of the extremity of a long wedge shaped mountain which, after rising gradually westwards for about three miles, terminates in an angular summit 1,800 feet above the level of the sea. By the side of and to the west of this summit are the two pillars mentioned, which appear to be formed of the same kind of white lime-stone as that of the mountain on which they are based, they are about 100 feet high and situated about 150 feet from each other. Each is four sided and rounded at its extremity, and the easternmost is shouldered. I do not think there is any thing of the kind more remarkable on this coast

than these tow pillars, they look in form like two huge crystals. I regret much that I had not an opportunity of visiting them, to be certain whether they were the work of nature or man, or whether they had any writing on them; but I hope this will be accomplished some day, as the ascent to them from the inner side of the cape offers no difficulty whatever. I endeavoured by the aid of a telescope to discover if there were any characters on them and could see none, but we were never I think within five miles of them.

The mountainous tract in the neighbourhood of Ras Sharwen which joins with the mountains behind Kashn and is continued westwardly, is much disturbed and broken, and a mass of basalt is seen in the cliff four miles west of the cape which has been pushed up, so far, towards the surface.

Proceeding from Ras Sharwen to Ras Bu Gashwa, a distance of eighty-six miles, we find the coast runs about W.S.W. and presents neither head-land nor inlet of any consequence the whole way; while the whole mountainous tract between these two points is continuous, with the exception of the openings of Wadi Masilah and Wadi Shikawi, of which I shall speak in their turn.

After a distance of about eight miles from Ras Sharwen the sea-cliff, which is here very irregular, ends, and the highland receding from the sea gives place to the commencement of a low shore, which after a short distance widens out to a breadth of ten miles, this it maintains more or less to Ras Bu Gashwa.

Immediately west of Ras Sharwen is an extensive tract of sand which covers the rocky masses beneath, like that on the other side of Kashn. These tracts appear to have arisen from the disintegration of the upper part of a yellow sandy deposit a few feet in thickness, which here, in some places, overlies the hard white lime-stone formation of the coast. At the western termination of this sandy tract near the sea is the village of Atab, and between this and the commencement of the low shore, nothing but a few rocky and insignificant head-lands intervene, the last or westernmost of which is called Ras Agab.

A few miles further on, after the lowland has commenced, is the town of Saihut distant from Ras Sharwen twenty miles. For a des-

cription of this place as well as the village of Atab I must again refer the reader to Captain Haines' second memoir. The former is the port to the valley I am about to mention.

Opposite the town of Saihut the mountains begin to fall back to form the eastern boundary of the great opening of Wadi Masilah, and fifteen miles further on, about three miles inland is the attenuated spur or angle of the opposite range, which forms its western limit; from these two points the opening narrows inwards to a gorge which leads into the valley, and from this again on either side, the ridges, which are here low, gradually rise to the height of the opposite mountainous tracts, so as to give the valley a crescentic form.

Wadi Masilah is certainly the grandest of all the valleys of this coast which open upon the sea, and running inland seem to divide the mountainous land of Southern Arabia into separate tracts. Its width and the height of its sides appear enormous, and like the "Devil's Gap" its summits are almost always bound together by overhanging clouds.

The inhabitants of Saihut state that it leads into the province of Hadramaut and that it continues in the country of the Mahrah the whole way, also that it is densely populated by this tribe. A stream of water issues through the gorge during the rainy season, and at its opening there are several date-trees, a few houses and some old castles in ruins, one of which situated on a little hill near the sea, appears to have been a square building with a turret at each angle. Its exports consist of goats, millet, and frankincense, which are exchanged at Saihut for wearing apparel and other necessities. I regret that I had not an opportunity of obtaining more information about this valley.

From the western side of Wadi Masilah the mountainous tract is continued on under the name of Jibal Assad,¹ sometimes descending in precipitous slopes, at others by subranges of mountains and hills, to the plain beneath. It presents nothing remarkable and nothing to interrupt its continuity but the opening of a tortuous valley called Wadi Shikawi, the whole way to Ras Bu Gashwa. But this is not the case

¹ Captain Haines' 2nd Memoir.

with the *sahil* or sea-plain below, where there are a series of horizontal effusions of black basalt that rank among the most remarkable features on this coast.

These are three in number and are called by the Arabs the "Harieq" or burnt place. They commence immediately west of Wadi Masilah and are continued on to the neighbourhood of Ras Bu Gashiwa. Each is accompanied by one or more cones about 100 feet above the level of the surrounding ground, and around each cone for a variable extent, is a low field or tract of basalt, so strikingly defined by its blackness and the light color of the *sahil* over which it has spread, that but for its being unattended by any active signs of volcanic eruption it might be taken for a semifluid mass of lava.

The first cone is about four miles west of Saihut. Its effusion has extended nearly to Wadi Masilah on the east, and joins with that of the following cone on the west.

The next cone is opposite Wadi Shikawi about nine miles from the last and about three miles inland. Its tract extends westward to the neighbourhood of Raidah, a village about eighteen miles distant.

In the centre of the third tract, which extends westward to Raidah, are four cones, and this effusion having taken place over ground for the most part 100 feet above the level of the sea, has found its way into the water-courses and appears at their openings on the shore in black rocks, contrasting strongly with the white color of the limestone on each side. The plains of the lower mountains here, also appear to be darkened, perhaps by ashes which were ejected from the cones or craters.

I explored a little of the second or middle tract, which extends over at least 150 square miles, at a place on the shore called Masainah, opposite Wadi Shikawi. It consists of large boulders of black basalt of different shapes and sizes, and just at this spot the molten mass appears to have passed over the beach into the sea. There is of course hardly any trace of vegetation on it, and the heat from it in the month of May was almost insupportable.

These black tracts as I have before said, are called by the Arabs the "Harieq" or burnt place, from a superstitious belief that they re-

present the ashes of seven Pagan cities which were burnt down by the Imām Ali, when he was sent into Yemmen in the tenth year of the Hijra to propagate the Mohammedan faith.

Connected with these volcanic effusions appears to be the shoal of Abdu'l Kuri, called by Captain Haines "*Palinurus Shoal*." It is about ten miles off shore opposite Wadi Shikawi, and its highest point has only four fathoms of water over it. The extent of the shoal is 1850 yards in a N.N.E. and S.S.W. direction, and it is from 300 to 600 yards broad. Captain Haines states "the soundings measured from the shoal spot gave 80 fathoms at one mile distance to the S.W., and 64 feet at two miles distance to the S.E. In every other direction they exceeded 100 fathoms at this distance. At two miles distance from the shoal spot towards the shore, the soundings were 120 fathoms."

Again opposite the town of Raidah, there is a pit from 120 to 135 fathoms deep close to the shore with 20, 30, and 40 fathoms all round it. Such irregularities in the bottom of the sea do not exist again throughout the whole of this coast, and I cannot help thinking that they are connected with the volcanic vents on the shore immediately opposite, both the shoal and the deep pit may have been of this nature, one a cone, the other a crater.

Opposite Wadi Shikawi also, is Masainah the place before mentioned in lat. $15^{\circ} 3' N.$, and long. $50^{\circ} 43' E.$ It is situated immediately inside the sandy beach at this spot. There is a depression here, about two miles long and half a mile broad, which is the termination of a torrent-bed, probably coming from Wadi Shikawi. It is about thirty feet below the plain behind, and about five feet below the ridge of the beach in front. At its eastern end is a pool of salt-water, and a black-looking quadrangular mound, and at its western extremity a salt-water lagoon, about one mile long and two hundred yards broad, surrounded by a dense thicket of mangrove trees; while between the two are several mounds formed of black basalt, on which are the huts of a few fishermen.

On the quadrangular mound at the eastern extremity of the depressed portion are the ruins of an old building. Hardly anything of this

remains but the foundation, which extends over an area of thirty yards square. The walls were two feet broad and parallel to the cardinal points, two square turrets were at each angle of the building, and on the eastern side of the N.E. angle descending towards the sea, was a flight of steps about nine yards wide. The mound appears to have been built and rebuilt over and over again with insignificant structures, and looks at a distance nothing but a heap of black stones; but the foundation of the original building shews that there was once an edifice on it of some consequence. It was, if we may judge from the foundation, chiefly built of white limestone, probably brought from the neighbouring mountains, in blocks two feet long, each block having what is called a building-face; there were also blocks of black basalt among them, and the mortar, between one and all presented no appreciable difference, so that in all probability these formed part of the original construction.

I carefully examined the whole of this mound and afterwards the immediate neighbourhood, but saw nothing more worth mentioning.

Opposite Masainah about ten miles inland (the breadth of the *sahil* here), is the ravine-like opening of Wadi Shikawi, which is bounded on each side by a rapid descent of the mountainous tracts, to a narrow gorge.

The valley seems to expand out a little interiorly and its direction appears to be N.W. It is said to be a day and a half's journey long, and then to divide into three branches; also to be much cultivated and thickly inhabited by people of different tribes.

The opening of this valley is more beautiful than grand, inasmuch as it is not carried through to the sky as that of Wadi Masilah, but shut up, so to speak, by mountain-peaks in the back ground. Wadi Masilah seems to go direct through to the sky, Wadi Shikawi to pursue a tortuous course. The latter is said to limit the territory of the Mahrah westward.

It was in a cavern of the mountains a little to the east of this opening that Captain Sanders, Mr. Smith, and the late Dr. Hulton, discovered some Hamyaritic characters in red paint. As yet none have been found further eastward.

The Beduins at the town of Raidah, whom we met by appointment on shore at Masainah, offered to conduct us to some places of the kind in the valley of Shikawi, and drew on the sand the very characters we were in search of, but in consequence of the arrival of two other parties of different tribes, and the dispute which ensued respecting the right of shore, and that of presents, and then an indiscretion of one of our party, which nearly brought us to a direct fight, we declined the offer of our Raidah friends, and thought ourselves not a little lucky when we got back to the "Palinurus" in the evening, with our skins sound. As it was we were obliged to leave a hostage (voluntary), and return the next day with presents to ransom him. But for this indiscretion which led to a want of faith on the part of the Beduins, we might have gone anywhere.

Excepting a few trees visible by the aid of a telescope, on the summit and sides of the mountainous tract between Ras Sharwen and the neighbourhood of Raidah and Ras Bu Gashwa, the whole coast is barren and uncultivated.

It was at Masainah that Captain Haines' survey, when proceeding eastward along this coast from Bab el Mandab, terminated, and it was also from that place that Captain Sanders' to Ras Sharwen commenced; Captain Sanders having previously surveyed the coast between the last named cape and Ras Fartak. I must therefore refer the reader for a description of the remaining part of this coast to Captain Haines' first memoir, and conclude my observations on it with a few general remarks.

Proceeding from Masainah westward, we find the *sahil* still flat, and but a few feet above the level of the sea, until passing the village of Raidah, when it begins to rise gradually, and with it a sea-cliff commences, which at Ras Bu Gashwa attains an elevation of 300 feet. These cliffs are white, and here and there broken by a torrent-bed, at the opening of which upon the sea is seen the black basalt before mentioned.

The village of Raidah which is about twelve miles from Masainah is about three quarters of a mile inland. It is the first place since leaving Haswel near Ras Fartak, that has presented any cultivation.

The goats of this place are remarkably small, white and spotted, short haired and gazelle-like. One she-goat with kid which was brought on board from Raidah, only weighed four and a half pounds, after having been prepared for cooking. The shaykh of Raidah treated us, as all other shaykhs whom we visited, with much hospitality. He was a Sharif and like the Sharifs generally, possessed that light colored skin, and well fed appearance which contrast so strongly with the dark and wiry figure of the hungry Beduin. He was however affected to a great extent in his hands with the disease called tuberculous lepra, so common in India, in which the phalanges of the fingers and toes drop off at the joints, leaving those which remain, contracted and frightfully distorted. It is said by the people of Raidah, that the heir to the shaykhdom of Raidah is always known by this distinction. Therefore it is probably hereditary, and does not shew itself until late in life, when the shaykhdom is naturally about to descend by death from father to son. It is the shaykh of Raidah too who claims the young of the shark found within the parent, to which I have before alluded when speaking of the perquisites of the shaykh of Masira.

From the people of Raidah I ascertained that which I had been led to expect from personal observation at a distance, viz. that the ruins of an ancient town exist on Ras Bu Gashwa. They are close to the cliff, and cannot fail to strike the eye of a person sailing along this coast. Near them is said to be a hill on which there is some ancient writing; probably that visited by the late Dr. Hulton, and Mr. Smith. There is also said to be more writing among the ruins of an old castle between Raidah and a place called Goseirah, a few miles further west on the coast, probably "Maaba" in which the gentlemen just mentioned, could find no inscriptions. Another place mentioned by the people of Raidah where there is ancient writing, is called Banat Hajam in the mountains opposite Masainah, where I appointed the Beduin party mentioned to meet me to visit it, but as I have before stated we were prevented from doing this by accidental circumstances. The distance between Raidah and Hadramaut, is said to be ten days' journey.

Opposite Raidah the mountainous tract is called Jibal Shamakh, and

the upper line of it falling considerably back, contrasts strongly with that just passed, in attaining its summit much less abruptly. The latter appears to be lower but this may be caused by its greater distance from the sea.

The *sahil* also here becomes widened, to upwards of fifteen miles, and in lieu of continuing low, or only a few feet above the level of the sea as before, and even on its surface, it is broken up in all directions and thrown into peaks, particularly close to the sea, to wit, Nassar and Manassar, which are some hundreds of feet above the level of the surrounding country, shewing that subterraneous agency probably connected with the extinct volcanos just passed, has been at work here below the surface, and for want of vents has given rise to all this disturbance. There are many hot-springs here, which are said to possess great medicinal virtues, indeed the *sahil* is called Hammam ; and from the number of places and ruins, and the cultivation which accompanies the presence of water here, this, next to Dofar, may be inferred to be the most favored part of the coast. It must always have been thickly populated, and therefore it is, that here, close to Hadramaut, where a few Hamyaritic inscriptions have already been found, others and still more valuable antiquities may be sought for, with probable success, and I should think without much opposition or difficulty.

From Ras Bu Gashwa, which is 300 feet high, the cliff continues on with breaks here and there, to the village of Hami, and a short distance afterward ends in a low sandy shore which is continued on to Ras Makalla. Here the highland again advances towards the sea and terminates westward, this, the longest maritime plain or *sahil* on the coast.

Passing round Ras Makalla, we enter the bay of the same name and arrive at the town which has been fully described by Captain Haines, and to whose description I must refer the reader only adding here a few observations on the neighbourhood.

Although the immediate vicinity of Makalla is particularly barren, yet this is not the case a short distance inland. Leaving the town and proceeding along the beach, we soon arrive at the debouchement

of a torrent-bed, where there is a long narrow slip of saltwater, such as is commonly seen at the ends of these places. And following this water-course for about a mile, we come upon some extensive groves of date-trees and a large garden. These belong to the shaykh of Makalla, who has built watch-towers there occupied by his soldiery to protect them from the incursions of the Beduins. The garden is irrigated by a stream of water which is found to be derived from a rivulet that has its source in a rocky ravine of the mountains close by. On pursuing this rivulet to its origin, we find it issuing from a place about 300 feet above the level of the sea, and at a temperature some degrees above that of the surrounding atmosphere. It soon increases in size, and falling over a little precipice into a natural bason, affords a most convenient place for bathing. There are many springs of the kind in the neighbourhood and many holes and subterraneous hollows filled with water in the adjoining mountains. These all pour their contents into the rivulet mentioned, which after a sinuous course would, if its waters were not diverted to the garden, find its way to the lagoon at the debouchement of the torrent-bed. The water is fresh and tasteless, without smell or deposit of sulphur at its source, though attended in some parts by the presence of much magnesian lime-stone in botryodal masses. The place where this spring is situated, is called Bokaren, and the stream which flows from it, is surrounded by date-trees. The inhabitants of Makalla wash their clothes there and obtain their daily supply of water from it.

With this brief description of Bokaren, let us proceed from Makalla along the coast, which now runs S.S.W. At first the shore is low and sandy, backed as usual a few miles inland by low hills and then the great mountainous tract, which is here nearly 6,000 feet above the level of the sea. This sandy shore is continued on to the next cape, called Ras Brum which is composed of dark, brown, peaked igneous rocks that are extended to Ras el' Asidah, and form, with the exception of Ras Rätile which is of white limestone, the principal headlands all the way. They extend a considerable distance inland towards the lofty mountainous tract behind, and attain their greatest height perhaps about Ras Brum and Ras Rehmat, which must be

nearly 1,000 feet above the level of the sea. They are thrown up in ridges which in some parts alternate with limestone and at Ras el'Asidah end in a few peaks and rocks scattered over the maritime plain westward of this cape. This is the largest tract of igneous rocks on the coast, it is fifty miles in extent, which is the distance between Ras Brum and Ras el' Asidah.

The islands of Baragah, Jibus, and Hallani which are opposite the southwesternmost part of this tract, are all of the white limestone formation of the coast. The rock of Hisn Ghorab from its form and color would lead one to infer that it was igneous, but it is stated by Captain Wellsted (*Travels in Arabia* vol. II p. 423,) to be composed of "a dark grayish colored compact limestone."

Nearly opposite Ras el'Asidah the continuity of the great mountainous tract is for the last time interrupted by one of these great valleys which lead into the interior. This is called Wadi Meifah and is a most important feature in the comparative geography of this coast. It was here that Captain Wellsted and Lieutenant Cruttenden discovered the ruins of Nakab el Hajar. The entrance to the valley is much further from the coast than that of Wadi Masilah, and is obscured by many high hills between it and the sea, although the great break in the outline of the highland distinctly marks its position. From the western side of Wadi Meifah, the mountainous tract which still continues nearly 6,000 feet high, advances again towards the sea, and about 90 miles N.E. of Aden approaches within half a dozen miles of it, after which it continues to run parallel to the shore for about 60 miles and then approaching still nearer, comes within a mile of it. At this part certainly, it appears very grand to one sailing along the coast near it. The soundings just opposite it agree with what I have stated at the commencement of this description, respecting their being deepest where the land is highest, they are here 150 fathoms two miles off shore. This part of the mountainous tract is called Jibal Fudtheli, the same name as that of the tribe who inhabit it. It extends westwards to within thirty miles of Aden, when behind it is seen a still more magnificent range called Jibal Yaffai, (also inhabited by a tribe of the same name,) which in broken ridges extends to Ras Bab el

Mandab, and here ends the southwestern extremity of the great mountainous tract of this coast.

Between the Yaffai mountains and the sea lies the extensive plain of which Aden forms the southeastern angle. *

COMPARATIVE GEOGRAPHY OF THE SOUTHEAST COAST OF ARABIA.

The foregoing description of the Southeast Coast of Arabia is given from east to west, but the descriptions of the ancient Geographers with which I am about to compare it, have been given from west to east. They are by Ptolemy¹ and Arrian,² (or the Author of the *Periplus of the Erythræan Sea*, who is supposed to have been a navigator or merchant of these parts), and are the only connected descriptions of this coast extant. Both accounts appear to have been written during the first fifty years of the second century of the Christian era and within twenty years of each other,³ long after Egypt had become a Roman Province, and when the Homerites or Hamyarites occupied the southwestern angle of Arabia, and the Sabeans lived next to them.

Ptolemy's account contains little more than the names of the places on this coast, in his time, in succession, from west to east, with

* In this description I have purposely omitted all geological detail, that I might not distract the readers' attention from the main point, and that I might not introduce here what will be better understood in a separate paper. I have also endeavoured, as much as possible, to avoid repetition of what has already been written of this coast by Captain Haines, the late Captain Wellsted, Lieutenant Cruttenden, the late Dr. Hulton, and myself, preferring rather to refer the reader to these writings, when requisite, than swell out this description by quotations from them.

For the spelling of the *Arabic* words I have taken as my guide that of the inhabitants of the several localities, where I could get any one to write them for me. I am aware that it is incorrect, but it has the advantage of local authority, and can be adjusted by an Arabic scholar. In the English spelling the vowels *a*, *e*, *i*, and *u*, must be pronounced as in Italian.

The information I have given of the interior of the country, and much of the life and habits of the people on this coast was obtained with as much care and regard to truth, as practicable; that of the coast itself has been described from observation and personal experience.

¹ Hudson's '*Geographiæ Veteris Scriptores Græci Minores*,' with notes and dissertations by Dodwell, 4 vols. 8vo., 1698—1712. Idem.

² Dean Vincent, *Commerce and Navigation of the Ancients in the Indian Ocean*, vol. II. p. 49.

their latitudes and longitudes; whereas the author of the *Periplus* gives few names but an ample description of both coast and commerce. It will be best therefore to take the description of the *Periplus* first and endeavour to locate Ptolemy's towns etc. afterwards.

At the second meeting of the Bombay Branch of the Royal Asiatic Society, after it was first established, then called the "Literary Society of Bombay," it was resolved, that prizes should be given annually for the best dissertations on subjects to be proposed by the Society, and the first subject was:—"To illustrate as far as possible from *personal* observation, that part of the *Periplus* of the Erythræan sea which contains the description of the coast from the Indus to Cape Cormorin."—Whether this was ever done or not I have been unable to discover, at all events it does not appear in the Literary Society's Transactions.

It is therefore not a little gratifying to me to find, when thus far advanced, that I should have been unconsciously labouring in a field of research so near that of the Primitive Members of this Society, as to be endeavouring to illustrate from *personal* observation, the very next preceding part of the *Periplus* to that which it was their first object to obtain.

I have already stated that both Ptolemy and the Author of the *Periplus* have described this coast from west to east, and it will be necessary now, to follow them in that direction, although the description just concluded has been from east to west.

In my comparisons I shall be guided not so much by names and measurements as by the principal physical features of the coast, such as bays, anchorages, promontories, shores, mountains, valleys etc.; for names change and measurements are not always correctly given, but physical features are comparatively indelible. The latter I shall premise before proceeding further.

The two principal bays on this coast are those of El Kamar and Curiyah Muriyah bay, and the small ones and anchorages are those of Aden, Makaten, Ras el' Asidah, Hisn Ghorab, Bander Brum, Makalla, Sharma, Bunder Lask inside Ras Sharwen, the Khor of Khalfot in the bay of El Kamar, Bunders Resut, Marbat, Jinjari, Hasek, and the straits of Masira.

The principal promontories are Ras Sharwen, Ras Fartak, Ras Sajar, and Ras Nus.

The maritime plains are, that lying north of Aden, that between the prominent portion of Jibal Fadtheli and Ras el'Asidah, that between Ras Makalla and Ras Agab a few miles east of Saihut the longest of all, and that of Dosar the most fertile and best irrigated of all.

The mountainous tract, is that which extends from the straits of Bab el Mandab to Ras Nus; it is divided into two portions by the interval of lowland between the Fartak and Fattak ranges in the bay of El Kamar. Then follows the tabular land without mountains from Ras Nus to Ras Jazirah, and from the last named place to the eastern extremity of Arabia the coast is seldom more than 100 feet above the level of the sea.

While the chief and only valleys are, Wadi Meifah, Wadi Shikawi, Wadi Masilah, Wadi Shagot and Wadi Rakot.

Rivers there are none, but there are the debouchements of great water-courses in different parts.

The most striking objects on the coast are the Black Basaltic effusions, the natural pillars on Ras Sharwen, the triple or quadruple headed mountain called Jibal Habarid, and Jibal Safan, the twin like mountains which mark the eastern extremity of Arabia.

The principal towns are Howaiyah, Makalla, Shaher, Saihut Kashn, Damkot, Sillalah and Lashkhara.

The Islands consist of three groups, first those opposite Hisn Ghorab, second the Curiyah Muriyah islands in Curiyah Muriyah bay, and third the island of Masira with that of Jazirat Hammar el Nasir.

These are the principal features of the coast, we will now proceed to the comparative geography of it.

Before doing this, however, it is as well to premise that in estimating the distances given by the Author of the Periplus, I shall value the degree at 500 stadia, the number found by Goseillin to answer best for following him through the Red Sea.¹

Beginning then from the straits of Bab el Mandab, we find the first place mentioned by the Author of the Periplus to be *Arabia felix*, which was 1,200 stadia from a port just within the straits called *Okelis*.

¹ Recherches sur la Geographie des Anciens. t. viii. p. 9.

This *Arabia felix* possessed a commodious harbour and sweeter water than that at *Okelis*; it was the centre of commerce between India and Egypt; whatever business passed between the eastern and western nations took place there,¹ and the inhabitants probably placed what duty they liked on both the Indian and Egyptian goods.

That *Arabia felix* must have been Aden seems determined by its distance from *Okelis* and the description given in the Periplus, simply because there is no other place in the neighbourhood to answer to one or the other. Aden has a commodious harbour and sweet water, and would now be on the chief line of commerce between Asia and Europe, were it not for the discovery of the passages round the Cape of Good Hope and Cape Horn.

If Ptolemy's latitude is to be allowed to have any weight his *Arabia emporium* which, as it is the first port mentioned after the straits of Bab el Mandab, so it may be reasonably inferred to be Aden, is the most southern but one of all his latitudes of the south-east coast of Arabia,² which is the case with Aden, than which only that part of the coast between Aden and Bab el Mandab is more south.³

Hence from the description of *Arabia felix* in the Periplus and the appropriate name by which Ptolemy has designated his most southern port of Arabia, there seems to be very little doubt that both one and the other are the same, and that the port to which they both alluded was Aden.

We have here then a point to start from, and from which the site of *Okelis* should be fixed, rather than Aden from *Okelis*, for there may be doubt about the position of the latter but there cannot be any I think about that of the former.

Proceeding eastward, it is stated in the Periplus,⁴ that *Arabia felix* is followed by an oblong shore and gulf, (had this been shore or gulf it would have been more intelligible, for certainly, in describing this coast, the author of the Periplus uses the two names *sinus* and *littus* for the most part synonymously.) This shore was more

¹ Ar. Perip. Mar. Eryth. p. 14. loc. cit.

² Ptolemæi Arabia p. 13. loc. cit.

³ Chart, Capt. Haines.

⁴ Loc. cit. p. 15.

than 2,000 stadia long ; after which came a promontory, and then another port called *Kanè*, situated in the thuriferous region. About 120 stadia from it (*Kanè*) were two desert islands, one called *Orneon* the other *Trallas*, and above it inland was a metropolis called *Sabbatha*. Frankincense was brought to *Kanè* which was grown in the neighbourhood, partly on camels, partly on rafts made of inflated skins and partly in ships. It (*Kanè*) carried on a commerce with Broach (or Gujerath) Oman, Sindh and the neighbouring coast of Persia, also with Egypt. Its exports were the natural produce of the country, frankincense, aloes etc. and such commodities as were found in the other emporia of the coast.

Now, at first, we should say, this *Kanè* must have been Makalla, for Makalla has the very trade at the present day which is here mentioned, with the exception of the more costly articles noted in the *Periplus*. Vessels from India, Persia, Sindh, Oman, Africa, the Red Sea and from many other parts of the world now frequent Makalla, not so much for the produce of Arabia as for that of the African coast opposite, and Socotra. Makalla is within six days journey of Hadramaut the central province of Arabia, and probably from its reputed fertility the most populous province, and a constant intercourse and small traffic is kept up between the two. Moreover, Makalla has a harbour secure against the N.E. monsoon, a prominent cape extending two miles into the sea on its eastern side, and an abundant supply of fresh water within one mile and a half of the town. There is not another place between it and Aden at all approaching to it in these respects, but then, where are the islands mentioned by the author of the *Periplus*, there are none ; and the distance *Kanè* was from *Arabia felix* prevents our going further eastward to find them. We must look therefore for another locality between Makalla and Aden, and taking the islands for our guide, we find opposite the first group I have mentioned, "a small secure and well sheltered bay and harbour one and a half mile broad by one deep."¹ This is called Bander Hisn Ghorab and is 3° 32' or 1750 stadia east of Aden. It is the only instance between Aden and Makalla where there is such a bay and where there are any islands. We have then the bay and the islands.

¹ Captain Haines' 1st Memoir.

It is now left for us to ascertain if the locality was favorable for a commercial depot, if there are any remains of this depot, and what was the name of it. That Bunder Hisn Ghorab is a favorable locality for a depot is evident from the harbour being nearly opposite the opening of the great valley called Wadi Meifah, the westernmost of the five great valleys on this coast, which running northward divide the mountainous land into separate tracts and thus afford passages in to the interior. That Bunder Hisn Ghorab and its neighbourhood do present remains of a powerful people is seen by the ruins of the fort called Hisn Ghorab on the west side of the harbour, which contains the longest Hamyaritic inscription yet found¹; and the remains of another fort of the same kind, also containing a Hamyaritic inscription,² in the valley of Meifah, sixty miles inland from Hisn Ghorab while at Makalla there is no valley nor even break in the mountains opposite it, neither are there any remains of ancient buildings. Indeed so little was thought of Makalla even 700 years ago when Edrisi wrote his Geography, that he does not even mention it by name, stating only that between a place called "Lassa (لسع)" which was west of Makalla and "Choma (شممة)" which was east of it, "on trouve sur la route un grand bourg auprès de duquel est une source et un bassin d'eau chaude où les habitants font leurs ablutions et transportent leurs malades. Ceux-ci trouvent un remède salutaire contre diverses infirmités."³ Then as regards the name although we have not literally "*Kanè*" here, we have a name under several forms which comes so near it that we have only to exchange one consonant for another, (one of the commonest interchanges to which the human voice is liable viz. *d* for *n*), to make it radically the same word; this is Khada. We have Ras Khada forming the eastern side of the bay of, or Bunder, Hisn Ghorab, then the Kadhrein islands (two) one mile off it, next the bay of Makadahah, the village of Makadahah, and last of all Ras Makadahah four miles east of Ras Khada.⁴ So that we have this name in at least five different forms occurring within as many miles of Bunder Hisn Ghorab.

Now most Geographers have identified *Kanè* with a bay in the old charts hereabouts called Cava Canim, but Dean Vincent states in a

¹ Wellsted Travels in Arabia Vol. I. p. 405.

² Idem, Vol. II. 421.

³ French Trans. by Jaubert 1846, 4 to.

⁴ Captain Haines' 1st Memoir.

foot-note, ' "In Sanson I find the name of Cava Canin first mentioned, where he has a bay and islands; but as Sanson was well acquainted with the Periplus, whether he placed them there out of respect to that authority, or had any other, I cannot discover." Again he says above, but "if they exist "that is the islands, they" identify Cava Canim for *Kanè* in preference to Makalla." That Sanson had authority for placing a bay and islands here there can be no doubt, and if the bay were called Cava Canim it still more approached the sound of *Kanè*, than Khada; nor is it impossible that some of the inhabitants may call Khada, Kana, at the present day. Be this as it may, sufficient evidence has been adduced I think, without identification of names, to prove to the most scrupulous investigator that the port called *Kanè* by the author of the Periplus was at Bunder Hisn Ghorab.

As regards the measurements given in the Periplus, taking 500 stadia to the degree, Bunder Hisn Ghorab would be less by 250 from Aden than that mentioned by the author of the Periplus, and Makalla 233 stadia more; while the distance of the islands from *Kanè* is stated to be 120 stadia, about 14 miles; the latter is more than it really is, for if Bunder Hisn Ghorab be *Kanè*, the islands furthest from it are Jibus and Baraghah; the former of which is 41 stadia or 5 miles off shore, and the latter 66 stadia or 8 miles, along shore, east of it.

Again if we take the distance Jibus is from the shore at the distance given in the Periplus, viz. 120 stadia, and apply this rate of measurement to the distance between Aden and Bunder Hisn Ghorab, which are now presumed to have been *Arabia felix* and *Kanè*, we shall find that it amounts to 5,040 stadia which is so out of all probability that we must at once come to the conclusion that for our identification of the places described in the Periplus we must not depend on the measurements, but, as I have before stated, on the indelible features of the coast.

Ptolemy's *Kanè emporium et promontorium* seem merely to want the latter to identify the former with the *Kanè* of the Periplus, and that, we may find in Ras el' Asidah, a black cape, the first conspicuous one after leaving Aden; or in Ras Rattle a conspicuous white cape;

¹ Op. cit. Vol. II. p. 334.

or indeed in Ras Makdahah already mentioned; all of which are within ten miles of Bunder Hisn Ghorab. *Emporium et promontorium* would certainly better suit Makalla and Ras Makalla, as for matter of sequence, but if Ptolemy's latitude may be brought into our assistance his *Kanè* was in a parallel of one degree north of Aden, while Makalla, the only other place with which it could be confounded is in one 105 miles north of it. Bunder Hisn Ghorab is in one 73 miles north of Aden.

Although it seems almost hopeless to attempt to identify any other of the places mentioned by Ptolemy between Aden and Hisn Ghorab, or indeed between the straits of Bab el Mandab and Aden; yet there is such a striking resemblance between names and places which immediately follow *Cana emporium et promontorium*, and names mentioned by Ptolemy himself, in separate parts of his lists, also between these names and names connected with *Kanè* in the *Periplus*, and between both and names existing at the present day, that it is perhaps worth mentioning.

Thus after *Cana emporium et promontorium* in Ptolemy, come in succession, *Trulla portus*, *Mæphath vicus*, *Prionis flu. ostia*, *Fontes fluvii*, *Embolum vicus*, and *Tretos portus*.¹

To commence with the resemblance between names mentioned by Ptolemy in different places, we have his *Tretos portus*, and under the head of "Islands," his *Tretæ*, which, if the name of an island or islands, were the next west of his *Insulæ Zenobii*; and as we shall find the latter to have been the Curiyah Muriyah islands, so the former must have been opposite *Kanè* or Bunder Hisn Ghorab. Ptolemy's latitude of *Kanè* and *Trete* are the same in Mercator's and Gosellin's charts, (and the latter placed in Socotra), but not the same in the tables *ap. Hudson*. *Tretos portus* was 1° 35' north of *Trete*. Then his *Trulla portus*, being close to his *Kanè*, of the same longitude, and within ten minutes of the same latitude, has a great resemblance to the island called *Trullas* by the author of the *Periplus*, which was one of the two opposite *Kanè* or Bunder Hisn Ghorab. While Ptolemy's *Mæphath vicus* is very nearly allied in name to Meifah, the valley of

¹ Loc. cit. p. 13.

Meifah and village of the same name in it ¹ at the present day, opposite Bunder Hisn Ghorab. And the mention of a river here, which if any exist in this part of Arabia for a period, might be fairly expected to issue from some great valley, would therefore be in Wadi Meifah, for there is no other great valley here. This is supported by Captain Wellsted's account, who states of a part of this valley, "it is about one mile and a half in width, and the bank on either side with the ground over which we [Wellsted and Cruttenden] were passing, afforded abundant evidence of its having been the bed of a powerful stream but a short time previous." ²

Of the oblong shore and bay, *littus oblongum et sinus*, mentioned in the Periplus, between *Arabia felix* and *Kanè*, (Aden and Bunder Hisn Ghorab), I can say nothing more, than that there is no bay there of this extent, and there is nothing in the shore that I could see to merit the designation applied to it by the author of the Periplus; but probably if I rightly understood the meaning of his terms I should have seen both. Neither can I make out Ptolemy's *Magnum* and *Parvum littus* here a bit more satisfactorily. There is a great maritime plain behind Aden, which is divided from a lesser one to the eastward extending to Ras l'Assidah, by the projecting part of the Fudtheli mountains, but beyond this there seems to be nothing to identify with Ptolemy's great and little shore.

The metropolis called *Sabbatha*, stated in the Periplus to be above *Kanè*, I shall have to notice hereafter.

Following *Kanè*, the author of the Periplus continues:— *Post Canam magno spatio terra retrocedente, alius profundissimus sinus sequitur longo tractu extensus, qui Sachalites nuncupatur: et regio thurifera, montana, adituque difficiles, * * * Atque hujus quidem sinus maximum est mundi promontorium ad orientem spectans, Syagros appellatum: in quo regionis illius castrum est, et portus, thurisque collecti receptaculum.* ³ We have therefore to follow the coast eastward to the first remarkable promontory, for we have no measurement here, and see if this answers to the description given in the Periplus.

¹ Willsted's Trav. in Arab. Vol. 1. p. 426 "Sketch of Route to Ruins of Nakab el Hajar."

² Idem.

³ Loc. cit. pp, 16, 17.

Leaving Bunder Hisn Ghorab then, we pass successively Ras Makallah, Ras Bu Gashwa, Ras Sherwen, and then come to Ras Fartak, which though not exactly answering to the description of the author of the *Periplus* in being the largest in the world, for Ras Sajar the next cape to it is larger, yet from its prominence, its size, and its position, it is by far the most remarkable on this coast. To give some idea of its prominence, I may again state that, it is the isolated extremity of a narrow mountainous ridge 2,500 feet high and four or five miles broad at its base, having the bay of El Kamar on one side and an extensive plain on the other; scarped 1,900 feet perpendicularly to the water's edge on the eastern side, and sloping rapidly on the western side, while the turn of the coast gives its extremity an E.S.E. aspect, and not the ridge, which runs north by west. Thus far it answers to the description of the *Periplus*. As for the rest, the coast-line begins to recede suddenly from Ras Kelb, twenty miles east of Bunder Hisn Ghorab, and continues to do so for thirty miles further on, to Ras Makalla; but from thence it is almost straight to the neighbourhood of Ras Fartak. It is indeed the straightest part of this coast, and is accompanied by the mountainous tract of Southern Arabia, almost uninterruptedly, the whole way. The latter is confronted by a comparatively low mountainous shore from Bunder Hisn Ghorab to Ras Makalla, (the tract of igneous rocks already mentioned,) and afterwards, by an almost uninterrupted strip of plain or *sahil* to Ras Agab, a distance of 140 miles, when the mountainous tract advances upon the sea again, and the coast becomes more or less scarped and mountainous to Ras Sharwen, and then mountainous at intervals, to Ras Fartak.

The mountains are steep and difficult of access, and they yield frankincense, for this tree grows on them from above Makalla eastwards, and probably more or less throughout the whole mountainous tract to Jibal Yaffai behind Aden; for it abounds on the limestone mountains of the Somali coast opposite, which is probably part of the same formation.

We have then an immense cape, with its extremity directed more towards east than south, (though not due east,) which is quite sufficient for our purpose; mountains steep and difficult of access, and yielding frankincense; and the shore receding, but not continuously to

form a great gulf or bay, as the author of the *Periplus* would seem to have it, any more than we have found a similar continuous *sinus*, or bay, between Aden and Bunder Hisn Ghorab. Thus we have nearly all the features mentioned in the *Periplus* between *Kanè* and *Syagros*. Let us now see what further confirmation the bay of *Sachalites* so far identified, derives from the testimony of Ptolemy.

In locating the different nations of southern Arabia, this Geographer states, *Sub his autem omnibus Chatrammitæ, à Climace usque Sachalitas*.¹ Now we know that his *Climax mons* was in the S.W. angle of Arabia, and moreover, we know the position of his *Chatrammitæ*, inasmuch as they were the people of Hadramaut, which province is six days inland from Makalla, ten days from Kashn, and about fifteen days from El Ghraitha, a town in the bay of El Kamar. Thus it must have been north of Makalla, extending some distance eastward towards El Ghraitha. It would then be behind the mountainous land and coast which we have supposed to border on the bay of *Sachalites* of the *Periplus*; and so far further, the position we have given this bay, would appear to derive additional confirmation from Ptolemy's testimony. It may be said that Ptolemy places his *Sinus sachalites* after Fartak, or *Syagros*, which is the case, but we shall see by and by that the author of the *Periplus* has one there too; and it is much more probable if we be right in the position of Ptolemy's *Chatrammitæ*, that Ptolemy or his informants omitted to mention a *sinus sachalites* here, than that the author of the *Periplus* put in one too many. Again we shall presently see from the probable etymology of the word *Sachalites*, that its application was more general than specific on this coast, which may still further account for Ptolemy's apparent omission.

The term *Sachalites* appears to be derived from the Arabic word *sahil*, ساحل, for in divesting the former of its Greek termination we have remaining *sachal*, which is *sahal*; since *ch*, not only with the Greeks and Romans, but with many nations at the present day, has been, and is now, substituted for the Arabic ح, *hha*, which from its guttural sound is pronounced like *ch*, e. g. Achmed for Ahmed, احمد; *Xarparwērai* (Ptolemy) and *Chatramotitæ* (Pliny) from حضرموت, (Abulfeda). Hence we have in *sachal* the equivalent radicles

¹ Loc. cit. p. 21.

of ساحل, which as I have frequently stated means maritime plain, and the people who inhabit the *sahil* are called by the Arabs the *ahl el sahil*, or *sahilites*. Gossellin (Vol. iii. p. 16. Op. cit.) has given this derivation to the word *Sachalites*, but the probability of it struck me before I saw it mentioned by this author; while if there be any part of this coast which deserves the name of *sahil* from its extent, more than another, it is the tract between Ras Makalla and Ras Agab. It is remarkable too, that we should have the port on this *sahil* to the great Wadi Masilah, called Saihut, which in some parts is called Sahul, and by the slightest permutation would make Sahil; while we have in Ptolemy's list of cities and towns in Southern Arabia, *Maccala* and *Sachle*, following next each other, from east to west, and the former twenty-five minutes north of the latter, which is as it should be, if they were meant for Masilah and Saihut.

On the shores of the Red Sea, Tahāma is the name applied to the maritime plain; on the south eastern coast of Arabia, it is called Sghil, while on the coast of Oman, the flat country north of Maskat is called Bātanah; but whether the latter be the common term for maritime plain here I know not; hardly any but that called Bātanah, exists, on the latter coast.

As for the derivation of *Syagros*, we have the same name for the first promontory after *Kanè*, both in Ptolemy and the author of the Periplus; but there is no resemblance in name between *Syagros* and Fartak. We have, however, a village on the shore within a few miles of Ras Fartak, called Sagar, سقر, which has the same radical letters in it as *Syagros*, when the latter is divested of its Greek termination, and in the name of this village therefore, would seem to linger a trace of the name formerly applied to the cape close to it.

To identify Ptolemy's *Syagros extrema*, with the *Syagros* of the Periplus, and the Ras Fartak of the present day, hardly anything more can be said than that as the next cape to *Kanè* in the Periplus is *Syagros*, so it is the next in Ptolemy.

After the places mentioned by Ptolemy, which would seem to have been about Bunder Hisn Ghorab, come *Thiallelah vicus*, then *Moscha portus*, and lastly *Syagros extrema*, which last was the eastern extremity of Ptolemy's *Regio Adramitarum*, or Hadramaut. As in

the Periplus, so in Ptolemy, we shall find a *Sinus Sachalites* coming after *Syagros extrema*, and from this being the eastern limit of his region of Hadramaut, so the *Sachalites* which he places south of Hadramaut, (*Chatrammitæ, à Climace usque Sachalitas*), seems to have been in front of it, and to have been the *Sachalites* mentioned by the author of the Periplus, and omitted here as before stated by Ptolemy. All this, without measurement, would seem to identify Ptolemy's *Syagros* with the *Syagros* of the Periplus, and the Fartak of the present day. If we may be allowed to quote Ptolemy's latitude without longitude in this case, his *Syagros extrema*, was in a parallel of $2^{\circ} 30'$ north of Aden, which is only twenty two minutes less than it should be; and if we were to carry on his *Syagros* even to the next cape east of it, viz. Ras Sajar, we should find it $1^{\circ} 6'$ still further south than it should be, for Ras Sajar is this distance north of Fartak.

The castle and port which served as a *receptaculum* of frankincense, mentioned by the author of the Periplus, at, or in the neighbourhood of, *Syagros*, might have been the port of Kashn, which is the chief town of the great Mahrah Tribe, on the coast; there is a bay there, the bay of Kashn, and a little Bunder opposite, called Lask, which is protected by Ras Sharwen from the southeast monsoon. The Shaykh of the Mahrah lives at Kashn. This might have been the situation too of Ptolemy's *Moscha portus*, which just precedes his *Syagros*. The bay, though not so capacious as, is something similar to, the bay of Resut, in which we shall find by and by, another incense port, called *Moscha*, by the author of the Periplus.¹

Next to *Syagros*, the island of Socotra and its produce is mentioned by the author of the Periplus, under the name of *Insula Dioscoridis*; but as I know nothing of this island personally, and it is rather on the coast of Africa than Arabia, though subject to the latter, (as noticed in the Periplus,) having been under the Shaykh of the Mahrah from time immemorial, I shall say nothing more of it here, than that the author of the Periplus is as accurate in his information

¹ Could *Moscha*, have come from سوق, *Mercatui operam dedit, emit venditque*. Gol. There is a place called *Suk* سوق, close to Kashn, also *Suk el Hasek*, and *Suk el Basir*, on this coast.

respecting this island as in any part of his description of the coast of Arabia. It is worth noticing however that it was under that Eleazus who was king of the Frankincense Region *in Arabia*, and not under Charibael, who ruled over *that* of Azania or the Somali coast. This, with the fact, that even to this day it belongs to the Mahrah Tribe, whose Shaykh as before stated lives at Kashn, the only port of the Mahrah, for they have no other with a bay, seems to point out Kashn as the incense port of the Periplus and the *Moscha portus* of Ptolemy.

Proceeding eastwards, the author of the Periplus states :—" *Syagrum proxime attingit sinus, versus continentem, Omana, valde profundus; cujus transitus stadia sexcento (600) patet. Post eum stadiorum quingentorum (500) spatium montes sunt alti, petrosi, prærupti, hominum in speluncis habitantium. Deinceps sequitur portus nobilis aptus ad thus Sachaliticum convehendum, qui Moscha portus dicitur. In hunc à Cana naves quædam mitti solent; quæque Limyrica aut Barygazis veniunt eo deferuntur, sero anni tempore hyemen ibi traducetes, à regis ministris thus recipiunt et exportant, cum quibus othonium, frumentum, atque oleum commutant.*" (p. 18, Loc. cit.)

The first thing that strikes us here is the identity of the bay of El Kamar with the deep gulf adjoining *Syagros*, and the least intelligible that it should be connected with Oman. But we know that Ptolemy's *Regio Adramitarum* ended at *Syagros*, and we know also, from the interval of low land, forty miles in breadth which exists in the bay of El Kamar, between the Fartak and Fattak ranges, that there is a natural separation here of the mountainous tracts of the south-east coast of Arabia; the one extending from Bab el Mandab eastwards to terminate at Ras Fartak, and the other continuing on from Fattak to terminate at Ras Nus. Therefore it is not extraordinary that the latter should meet with a new appellation from the author of the Periplus, but why it should be named *Omana*, or Oman, is difficult to understand, when that country at the present day is disjoined from the mountainous tract last mentioned, by the intervention of the *regio barbara* of the Periplus, or great desert of Akaf, upwards of 250 miles wide, which is even a greater separation than if the sea itself had existed between these two parts of Arabia. But of this hereafter; let us deal with the physical features of this part first.

That there is in reality a *sinus*, or gulf, next to Fartak, and that too running very deep into the mainland, (*valde profundus*,) viz. the bay of El Kamar, the deepest on this coast, of which Ras Fartak is the south western extremity, is undeniable; but that its *transitus*, is only 600 stadia, unless we take it from Ras Fartak to Wadi Shagot where the low shore first meets the mountainous tract of Fattak, is not correct. For the real *transitus* of this bay, that which a coasting vessel would make it, is about 850 stadia, that is the distance, allowing 500 stadia to the degree, between Ras Fartak and Ras Sajar, the next prominent cape. But that the former, and not the latter, was the *transitus* of the author of the Periplus seems plain, for after giving us his measurement of it, he immediately commences with a second measurement of 500 stadia, without saying anything of the coast along the first measurement, which agrees with what I have stated, viz. that there is a low barren tract here without any remarkable feature on it, and apparently uninhabited; but, where at the end of his 600 stadia the lowland terminates, and, with the commencement of his next measurement the highland begins, there he observes are mountains, high, rocky, precipitous, with men living in caves.

I have already stated that the lowland in the bay of El Kamar meets the mountainous tract on the northern side at Wadi Shagot, and that here the mountains are high, and rocky, being composed of hard limestone, also that they are precipitous, and that the lights in them at night as well as what we saw by day, shewed that there are many caverns in them which are inhabited. Moreover, as stated in the preceding geographical description, this is the commencement, coming from the west, of the wooded region of this coast. Here it is that the frankincense tree is first met with in abundance, and from henceforward to the end of this mountainous tract, at Hasek, every village on the coast exports large quantities of frankincense, which is just the contrary as we proceed in the opposite direction; not so much perhaps from the greater scarcity of the tree, as on account of the large importations of frankincense at Makalla from the opposite shore of Africa. After these high mountains, etc. and the end of the 500 stadia, comes the Author's *portus nobilis*, which he calls *Moscha*.

And it would be difficult to determine where this port had been situated, were it not for the following context viz. "that vessels coasting along from Malabar or Broach (Canara or Cambay) at advanced seasons, put in here for the winter, where they took in frankincense in exchange for muslins, corn, and oil."

Now had there been any bay on this part of the coast where vessels could stay during the winter, or S.W. monsoon, besides that of Resut, which I have before stated to be sufficiently large and deep to shelter vessels of three or four hundred tons burden during that tempestuous season, there would have been a difficulty in saying where the *Moscha* of the Periplus was, but now there is none. There is no other bay of the kind in this neighbourhood, and none on the whole of this coast, so capacious, for sheltering vessels during the S.W. monsoon. There is another bay at the eastern extremity of Dofar, viz. at Marbat, but this only affords shelter during the N.E. monsoon and is open to the S.W. monsoon. There therefore can be no hesitation in identifying the bay mentioned by the author of the Periplus with Bunder Resut and placing his *Moscha portus* here. I have already said that there are the remains of a place or fort on the extremity of Ras Resut, and that a short distance from it, there is an ancient Burial-Ground of two or three acres in extent, which remains shew that this locality was once inhabited, although there is not a human habitation now within several miles of it. But places of this kind in Arabia and Africa do not want human dwellings to give them a name. If *Moscha* be derived from *sak* as before mentioned (p. 298 foot-note,) there might have been a *suk* or *forum* here, where the mountain tribes assembled to barter the produce of the country with ships which anchored in the bay for that purpose. At Berbera on the African coast, opposite Aden, there are twenty thousand people at the bartering season and at other times not a soul.¹ Fresh water there is, in plenty, close by Resut, and the frankincense and moql trees, the one yielding frankincense the other bdellium, grow in countless numbers within a

¹ Lieutenant Cruttenden, Transactions Bombay Geographical Society, April to September 1849 p. 137.

few hours walk of the bay. The former is so abundant and so cheap here that when I asked the shaykh of Aukadh, the next village to Bunder Resut, for a specimen of the frankincense which grew in the neighbourhood, he sent me nearly a hundred weight of it, and when I took a few portions and gave the people who brought it the rest, they considered it of so little value that they would not be at the trouble of taking it away with them. Thus we see that the bay of Resut is in the heart of the Frankincense Region.¹

It is most probable that the vessels which put into the bay of Resut under such circumstances as those mentioned in the Periplus, took the frankincense which they got in exchange for their muslins, corn and oil, on to *Kanè* or *Arabia emporium*, to transfer to the Sabeans at *Kanè* (Bunder Hisn Ghorab.) or to exchange with the Egyptians in the bay of Aden. For in India a species of the frankincense tree abounds, which yields a plentiful supply of the same kind of resinous gum as that of Arabia, and therefore would not be required here.

We have then I think identified the gulf adjoining *Syagros* with that alluded to by the author of the Periplus; his *transitus* of 600 stadia; the rocky mountains on the coast with inhabited caves. His distance of 500 stadia more, would not bring us to within 20 miles of Resut, computing 500 stadia to the degree, but then the defective measurement here, is compensated for, by the presence of only one bay in this neighbourhood which answers to the description in the Periplus, and the port called *Moscha* must therefore be fixed here.

Here also we have the name of *Sachalites* again, (*thus Sachaliticum*,) as if there were a *Sachalites* also here; for we cannot suppose that the small quantity of frankincense produced from the mountains between Bunder Hisn Ghorab and Fartak was imported at a bay in the heart of the Frankincense country; so that, this sachalitic frankincense must have been brought from the shores of Dofar, if *sahil* be synonymous with *sachalites*; for no name is given by the author of the Periplus to the *sinus* adjoining Fartak on the east (which is the bay of El Kamar,) neither is there any *sahil* there to call

¹ For a description of the Frankincense Region of Arabia, see No. xi of this Journal.

for the term "*Sachalites*." Again Ptolemy's *Sinus Sachalites* which he mentions immediately after *Syagros extrema*, extended to Ras el Had, or further still perhaps; for from *Syagros* eastwards, he includes every thing under the head of *Sinus Sachalites*, even to the straits of the Persian Gulf.

Let us now return to Ptolemy's *Syagros*, or Fartak, and its neighbourhood, and although it seems hopeless to attempt to identify any of the places mentioned by him with those now existing between Ras Fartak and Resut, see, if it be possible to establish the line of demarcation between his *Regio Myrrhifera exterior* and *Libanotophoros sive Thurifera*.

Ptolemy states:—*Quibus versus orientem juxta Chatramititas quidem, est exterior Myrrhifera*, and then immediately after, *Juxta autem Syagrum montem usque mare Ascitæ sunt*. Now the fact of our having ascertained that Hadramaut lies inland, west of the bay of El Kamar and that of Ptolemy's having placed on its eastern side the *Regio Myrrhifera exterior*, together with the mention of *Syagrum montem*, seems to require no further evidence to convince us that we have come to the termination of the latter at Ras Fartak, and the commencement of his *Libanotophoros* in the mountains of Fattak.

Ptolemy also states in enumerating the principal tribes and mountains:—*et Omanitæ, quibus orientaliore sunt Cattabeni usque montes Assaborum. Sub quibus Libanotophoros sive Thurifera*. Here there is a striking identity of names between Ptolemy's *Omanitæ*, and the name of *Omana* given in Periplus to the coast immediately after *Syagros*, particularly as the position of the former is so well marked by the *Cattabeni* being placed immediately after the *Omanitæ*, to the eastward; and under the *Cattabeni*, the Libanotophorous Region. I have already stated that there are two localities in which the frankincense tree abounds at Dofar, one on the mountains, the other on the maritime plain.¹

If then through the conjoint aid of Ptolemy and the author of the Periplus we are able to fix the commencement of the Libanotophorous

¹ Descrip. of Frankincense Tree. loc. cit.

or Frankincense Region, by establishing the limit of the *Regio Myrrhifera exterior*, then we shall also be able to judge where the town of *Sabbatha* before mentioned, was situated; since this place was according to Pliny,¹ eight days distance from the Frankincense Region; and if through this measurement we can find out the neighbourhood of *Sabbatha* we may still further be able to establish the position of *Kanè*. Supposing we measure these eight day's journey westward, or S.W. from Wadi Shagot, or the Fattak range, at between thirty and forty miles a day, *Sabbatha* would be found about Wadi Meifah, which if we have rightly fixed *Kanè*, should be its situation; but unfortunately these journeys are too great, at the same time, Wadi Shagot is at the eastern termination of the Fattak range, which, running inland southwestward, may prolong this mountainous tract, (on which the frankincense tree abounds in the bay of El Kamar,) for some distance westward, and thus bring it nearer *Sabbatha*, which would of course shorten the day's journey.

After *Syagros extrema*, Ptolemy places his *Sinus Sachalites. Sachalitarum in sinu Sachalite, in quo Colymbesis Pinici; super utribus transnavigant*; under which heading comes a number of places to which I shall have occasion to refer by and by.

Continuing on with the author of the *Periplus from Ras Resut*, we find that he states:—*Hinc rursus stadiorum circiter mille et quingentorum (1,500) spatio regio illa usque ad Asichonem, ad terram usque extenditur, cujus in extrema ora septem (7) insulæ ex ordine jacent, Zenobii dictæ; post quas alia regio barbara, quæ non ad idem regnum sed ad Persidem pertinet.*

Here the measurement is very incorrect, inasmuch as are there only 750 stadia (1° 30') at most between Resut and Hasek, which from the presence of "the islands" and its name, is unquestionably the *Asichon* of the *Periplus*; not less so than the bay of Resut is the site of his *Moscha portus*, because there is no other bay of the kind on this part of the coast.

The islands called *Zenobii insulæ* are the Curiyah Muriyah islands, the second group on this coast coming from the west; and the *regio*

¹ Lib. xii c. xiv. "*Octo mansionibus.*"

barbara, is the comparatively low, desert-land, which follows the abrupt termination of the Negdi or mountainous tract called Jibal Sabhan. It would be difficult to make out seven islands here, unless we counted some groups of rocks which are uncovered at low water, but there are five real ones, which is near enough, viz. Haski, Soda, Hallani, Jibliyah, and Gharzaut.

This brings us to the eastern extremity of the Frankincense Region, and before proceeding further with the author of the Periplus, let us see if there be any thing in Ptolemy which can be identified between Ras Fartak and Hasek. I have already stated that it seems hopeless to attempt this in the bay of El Kamar.

After *Syagros extrema*, Ptolemy continues as before stated. *Sachalitarum in sinu Sachalites, in quo Colymbesis Pinici; super utribus transnavigant*, under which heading are, *Cumacatum* (Pal. *Cumetacum*) *vicus*, *Ausara civitas*, *Astoa vicus*, *Ange vicus*, *Neogiala* (Pal. *Neogilla*) *navale*, *Hormani flu. ostia*, *Didymi montes*, *Bosara* (Pal. *Conseude*) *civitas*, *Vaticinum sive oraculum Dianæ*, *Abisa* (Pal. *Abisagi*) *civitas*. *Corodanum promont.* *Et in Angustiis sinus Persici: Crytus portus, Melanes montes Assaborum dicti, and Assaborum promontorium.*

This *Sinus Sachalites* of Ptolemy would seem to extend to the straits of the Persian Gulf, which is unintelligible, unless a different meaning is given to "*sinus*;" how far this can be done I leave others to decide. In another place Ptolemy states, *Juxta autem Syagrum montem usque ad mare Ascitæ sunt*. These *Ascitæ* were most likely his *Colymbesis Pinici*, pearl-divers, who sailed about his *Sinus Sachalites* on inflated skins (*ασκος*) and if we are to extend his *sinus* to Ras el Had, we shall find that east of Hasek, the use of inflated skins, as before stated, is not only common but from the great poverty of the country and people, almost wholly supplies the place of boats at the present day. The next place to *Syagros* is *Cumacatum vicus* a "place", this might have been Damkot; then follows a city called *Ausara*.* Now

* NOTE.—Pliny mentions *Ausaritis* as one of the kinds of Myrrh, (lb. xii. c. xvi.) but this came from the *Gebanites* whom he places at the straits of Bab el Mandab. Salmasius states that Pliny followed Strabo, who writes, first came the *Minæi*, then the *Sabæi*,

as there is nothing in the bay of El Kamar to induce one to think then the *Catabanes* to the straits of the Red Sea, and east of all the *Chatramotitæ* (lib. xvi. p. 768;) while Ptolemy states, that the *Catabeni* lived next the Frankincense Region, which was east of the *Myrrhifera exterior*, and therefore east of the *Chatramotitæ*, whose region extended to his *Sinus Sachalites*, which was again east of *Syagros*; and Strabo afterwards adds, *Catabanum thus gignit, myrrham vero Chatramotitæ*, Catabania produces frankincense, Chatramotites myrrh. Yet the Frankincense Region and the straits of Bal el Mandab are hundreds of miles apart; how then could the *Gebanites* be neighbours of the *Catabeni*. Let us see how far the probable origin of the name *Gebanites* will help us out of these difficulties. *Breve*, the *Gebanites* as before stated, according to Pliny, inhabited that part of Arabia next the straits of Bab el Mandab, their port was *Okelis* (Plin lib: xii. c. xix.) just inside the straits, the *Okelis* of the Periplus, and Pliny states "*De Thure*" "*evehî (thus) non potest, nisi per Gebanitas; itaque et horum regi penditur vectigal.*" Hence the *Gebanites* were the inhabitants of the mountainous part of the S.W. angle of Arabia, and they would not allow any frankincense to be passed through their country without toll. Salmasius writes, (p. 351.) "*Gebalitæ ab oppide Gebala. Stephanus Γεβαλα vocat. Alii Γεβανα. Nam Græci λ et ν in multis confundunt.*" Now the latter was probably the proper spelling, inasmuch as the "*Gebala*" appear to have been no other than the Kabayle or mountaineers of Southern Arabia at the present day. The Arabs at Aden, call the inhabitants of Jibal Yaffai, or the mountains inland of them, the Kabayle; and if you ask at Makalla, who inhabit the mountainous region between that town, and the province of Hadramaut, the answer again is "the Kabayle." It would seem therefore to follow, that the *Gebanites* inhabited under the same name, as they do now, the mountainous tract between the straits of Bab el Mandab and Ras Fartak, where it is evident the *Catabeni*, whom Ptolemy places next the Frankincense Region, might have been their neighbours without living near the straits. Ausara might have been one of these chief cities, and the kind of myrrh mentioned by Pliny, called "*Ausaritis*" after it. Pliny, who in his geographical description comes round from the eastward, places the *Catabeni* first, "*Gentes Larenduni, Catabeni, Gebanitæ, etc.*" (lib. vi. c. viii.) Hence it would also appear that Strabo's *Catabanes*, who extended to the straits of Bab el Mandab, ought to have been called *Gebanites*, unless, as some have thought, the terms were synonymous, (Salmasius, t. i. p. 351. D.) Could the kind of myrrh called *Ausaritis* by Pliny have grown near to, and have been called after, Ptolemy's city of *Ausara*, and like the frankincense which grew in *Catabanum* have been passed through the hands of the *Gebanites*; and could the *Catabeni* have been a tribe of the Kabayle, or *Gebanites*, and that tribe the Bin Kahtan or Beni Kahtan, the head family of the Karah, who inhabit that part of the mountainous tract called Sabhan and Shaber, at the present day? The Frankincense Region of Arabia. Bochart supposes the *Catabeni* and *Gebanites* to be the same people (Dean Vincent p. 339, foot-note). It is perhaps worthy of remark also, that among Ptolemy's cities and towns of Southern Arabia, there is another place called *Ausara*, which was in 25° 30' N., that is within 40 miles of the latitude of Ras Massandan, which was the eastern extremity of Ptolemy's *Libanotophoros* or Frankincense Region.

there could ever have been a city there, and there is every appearance of it in the district of Dofar, *Ausara* might, therefore, have been the name of the principal place in the latter. I have already alluded to the extensive ruins of an old city in Dofar now called El Balaq. Next come two places, *Ange* and *Astoa*, which might have been Marbat and Has-ek; but it is useless to write one's conjectures in this respect, let us go on to Ptolemy's *Melanes montes et promontorium Assaborum*, which were the eastern termination of his Libanotophorous or Thuriferous Region, and which we find forming the western promontory of the straits of the Persian Gulf, nine degrees north of, or 540 miles distant from where if really is, with an immense desert between the two points more than equal to so much sea, as a barrier of separation. That this is a mistake there can be no doubt; but there is still the question whether the Libanotophorous Region alone has been misplaced, or whether the *montes et promontorium Assaborum* have not been transported to the straits of the Persian Gulf with it. Be the latter as it may, the termination eastward of the frankincense country of Arabia is called Jibal Sabhan; and the terminating cape though called Ras Nus, has within six miles of it, two capes, called respectively, Ras Samhor and Ras Samhal; and between them again, a valley called Wadi Samhal; in which names we have but to exchange the *r* and *l* respectively for *n*, and the *b* in both for *m*, to have Sabhan; the commonest permutations to which the human voice is liable, and which the wild inhabitants of this part of the coast, from whom Captain Haines must have obtained these names, would be likely to fall into, and persist in according to the custom of the day, or the natural development of their organs of voice, which might favor one kind of sound more than another. We have a remarkable instance of this permutation in point. This very Ras Nus here, is called by Edrisi, Ras Lus, لوس. In these names then of Jibal Sabhan, and Ras Sabhan we seem to have *montes et promontorium Assaborum*, and that too at the end of the Libanotophorous Region; for as D'Anville states, the *Assaborum* is nothing more than *Sabo*, which with the Arabic article is pronounced *As-Sabo*. As to the *m* in Samhor, and Samhal, the inhabitants of Marbat close by, called the mountainous tract above them at one

time, Samhan and at another Saban or Sabhan. Lieutenant Cruttenden writes it "Subahn;"¹ the aspiration is as immaterial as the rest. Almost every thing therefore inclines one to the belief that the root of the word is "Saba", from which both the Greek and Arabic appellations have been derived. There is another coincidence here, which seems to assist in accounting for the misplacement of this region viz. the Frankincense Region appears to have gone by the name of *Omana*, for the author of the Periplus, as I have before stated, makes his gulf after Fartak, or *Syagros*, extend into the land of *Omana*, and then at the end of the Frankincense Region observes, after the Zenobian Islands comes the *regio barbara*, which belonged to Persia; while Ptolemy writes, *et Omanita*, (who from their position and name must have been the inhabitants of the *Omana* of the Periplus next to *Syagros*.) *quibus orientatiores sunt Cattabeni usque montes Assaborum. Sub quibus Libanotophoros sive Thurifera.* Can it be that this *regio barbara* did belong to Persia, and that the country west of it was called Oman, and that this has led to the mistake of placing the eastern extremity of the Frankincense Region at the northernmost extremity of the Oman of the present day, which is the western promontory of the straits of the Persian Gulf, called in the *Paraplus Nearchi*¹, the promontory of Maceta; adjoining which too Ptolemy's *Macæ* lived; and which was probably for centuries back called Mazun, by the Arabs, (المزون) *terra Oman*, Gieuharis ap. Golius); and is the cape Massandan of the present day. Yet the author of the Periplus calls this *Sabo*, but then it is questionable if he does this on his own authority.

We come now to the description of the coast from Hasek to Ras el Had, and returning to the Periplus we find it stated:—*Hanc ubi ex supernis locis prætervectus fueris circiter duo millia (2,000) stadiorum à Zenobii insulis, alia occurrit insula Sarapidis nuncupata, quæ à terra circiter stadia centum et viginti (120) abest, latitudine fere studiorum ducentorum (200.)*

This, is both exceedingly graphic and correct in measurement. "When we shall have sailed from these high places" (meaning the

¹ Trans. Geograp. Soc. Bombay, January 1837. p. 71.

Geog. Min. Groec. ap. Hudson p. 22.

Subhan heights (of 4,000 feet over Hasek,) and passed along the comparatively low *regio barbara* (of 800 feet), of which the author states nothing, because there literally is nothing to notice,) 2,000 stadia from the Zenobian Islands, there is another island, called *Sarapis*; the length, breadth and distance of which from the shore, so corresponds with that of Masira, that had this not been his next island to the *Zenobii insulæ*, and had nothing more of it been stated in the *Periplus*, the measurements rated at 500 stadia the degree would have been sufficient for its identification.

In this island the author states there were three places, inhabited by Priests of the *Ichthyophagi*; by which we infer that the inhabitants of Masira and its neighbourhood were *Ichthyophagi*. He also states that boats and vessels came to *Sarapis* from *Kanè* for turtle-shell, and that this was abundant there, and of excellent quality. With the exception of the Priests, this would do for the description of Masira at the present day. I have already stated that its inhabitants as well as the people on the coast opposite, subsist almost entirely on fish, also that it is famous for turtle-shell, and that the channel between Masira and the mainland may be said to swarm with turtle. For two or three shillings, the people of this island will bring a turtle weighing upwards of 260 lbs. and that too at a few hours notice. They go forth, after the order is given, to the place where the turtle most abound, and while the latter consider themselves secure below the shallow water, a loose barbed spike at the end of a long bamboo, to which is attached a rope, is struck into their back, and they are thus pulled on board, with almost as little ceremony as a rock.

Another thing is worth mentioning here. The author of the *Periplus* states, that in Masira, the inhabitants speak Arabic, which would seem as if hitherto they had not done so. And when we remember that the inhabitants of the Curiyah Muriyah islands, the Karah on the coast opposite, and the Mahrah, all speak the same dialect and one differing very much from common Arabic, we seem to come at the meaning of the remark.

Proceeding eastwards from *Sarapis*, or Masira, the author of the *Periplus* continues :—*In sinu autem vicinæ continentis, ad Septentriones,*

prope ostium maris Persici, insulæ jacent ad quas navigatur, Culæi insulæ dictæ, quæ fere bis mille stadiorum intervallo à continente sunt disjunctæ; which, as there is no bay between Masira and the turning point, viz. Ras el Khabba, but a nearly straight coast, is better rendered by Dean Vincent thus:—" [Proceeding on your course from Sarapis,] you wind round with the adjoining coast to the north; and as you approach towards the entrance of the gulf of Persia at the distance of about 200 stadia [from *Sarapis*] you pass a group of islands which lie in a *range* along the coast and are called the islands of of Kalaius." *Περικολπίζω*, is to sail round a bay, and as I have before said we must not always give the real meaning to *κολπος*, in verifying the descriptions of the author of this Periplus on the coast or we might as well give up the attempt at once. The literal meaning of *περικολπίζοντι* here, as Dean Vincent observes, is "to follow the windings of the shore," hence we have "winding round the coast to the north," which is as it should be, for in following the coast north-eastward from Masira we must wind round it at Ras El Khabba, and that too towards the north.

We have no mention in the Periplus of Ras El Had, because as I have before said, it is a sandy plain forming the northern angle of the east extremity of Arabia, which extremity is not attenuated as those may think who view it in small maps, but truncated, and has an eastern aspect of twenty miles in extent, the southern cape or angle of which is Ras el Khabba and the northern, Ras el Had. Here therefore, as there is nothing remarkable but the presence of the two mountains called Jibal Saffan, we do not wonder at the author's silence. Yet his Commentators would have had it believed that he has overlooked the magnitude of Ras el Had; and in such observations, we see how necessary it is to be really, and not imaginarily acquainted with a subject, before we attempt to establish the truth of parts of it, upon the criticism of others. Dean Vincent remarks, on the description of *Syagros*, or Fartak, in the Periplus "it is not true" as the author of the Periplus states "that it (Fartak) is the largest promontory in the world; for Ras el Had, on the same coast is larger."

Again Gosellin, describing the bay of El Kamar, states from El Edrisi: "Les Arabes appellent aussi ce rivage *Ghobb Al Camar*, la cote de la lune puisqu'il est entourée, a quelque distance par un chaîn de montagnes semicirculaire qu'ils sont comparée au croissant et qu'ils ont nommé la montagne de la lune" ¹. We have seen the absurdity of the former, and nothing can be more absurd than the latter. Had el Edrisi or Gosellin ever been on the spot, they would have seen that the western shore of the bay of El Kamar is hardly 100 feet above the level of the sea, that it is forty miles broad, and that this tract of lowland extends westward between the Fartak and Fattak ranges, as far as the horizon without being bounded by any mountains; and that the mountainous tract continued on from Fattak to Ras Sajar does not fall back, or present any maritime plain in front of it until arriving at the district of Dofar. I particularly looked for a moon-shaped mountain, and a crecent of mountains, in the bay of el Kamar but without being able to discover the semblance of either.

There is a curious coincidence here in names though, taken in connection with the produce of the mountains viz:—That the Arabic name for the frankincense tree is *Kandaru* and the Sanscrit name for the moon *Chandra*, while the mountainous tract from Damkot eastward abounds with the frankincense tree, and is called on to Ras Sajar, Jibal Kamar, or the Mountains of the Moon.

Returning to the islands of Kalaius in the Persian sea, or sea of Oman, we shall find their distance remarkably well measured if we take it from the island of Masira, and not from the mainland, as the author of the Periplus has it. If we follow the coast northward from Masira to the straits of the Persian Gulf, we shall find that in our course we shall meet with only one group of islands, which are about forty miles north of Maskat, and about twenty miles from the shore. These then must be the islands alluded to by the author of the Periplus, for there are no others in this sea; and if we measure the distance from the northeastern extremity of Masira to Ras el Khabba, and from thence to the first of these islands, we shall find it just upon four de-

¹ French Translation.

grees, which, allowing 500 stadia to the degree, is the distance which the author of the Periplus states they were off shore; but as Dean Vincent observes, "How islands that lie 200 miles from the coast can be said to be in a bay of the continent cannot be comprehended." Hence there must be some mistake, which I see no other way of reconciling than that mentioned.

I have however gone further with the author of the Periplus than I had intended, and must now leave him with the following remarks by Dean Vincent. "On the southern coast of the peninsula we can trace him, at almost every step, to Fartaque and Ras el Had; but from thence he seems, without entering the Gulf of Persia, to have stretched over with the monsoon, either to Karmania, or direct to Scindi, or to the Gulph of Cambay. At those points we find him again entering into those minute particulars, which bespeak the descriptions of an eye-witness; while, of the parts previous to these, he speaks in so transient a manner, as to create a belief that he writes from the report of others; but on this question it is not necessary to decide, the reader must determine for himself."

Returning to Ptolemy, we require little to identify most of the islands he mentions on this coast, with those mentioned by the author of the Periplus, and with those which exist at the present day. After the straits of Bab el Mandab, come, under the heading *In Rubro mari: Agathoclis duæ, Coconagi septem (Pal. tres), Dioscoridis civitas, Occidentalis insulæ finis, and Tretæ*; and then under *Et juxta Sachalitem Sinum: Zenobii septem insulæ, Organa, and Sarapidis, (Pal. Sarapiadis) in qua fanum*. Ptolemy's *Insulæ Zenobii* are from sequence and name identified with those of the author of the Periplus, and therefore with the Curiyah Muriyah islands of the present day; if seven, they agree also in number with that of the Periplus; if three, there are only three in the group which deserve the name of islands viz. Hallaniyah, Soda, and Haski; the rest are merely rocks. *Trete* although under the head of "islands" is fixed by Ptolemy's latitudes and longitudes as a place, in the island of Socotra; but when we find other groups of islands in the Gulf of Aden, preceding those opposite Bunder Hisn Ghorab, to identify with his *Agathoclis* and *Coconagi*, and then the island of Socotra to identi-

fy with his *Dioscoridis* ; and have still the islands opposite *Kanè*, or Bunder Hisn Ghorab, (the *Orneon* and *Trullas* of the *Periplus*,) unidentified ; with the name of *Trete* in the list of islands, immediately preceding that of *Zenobii* ; *Trete* and *Kanè* in the same latitude ; the second port east of *Kanè* called *Tretos* ; *Tretos portus* and *Trete* within thirty minutes of the same longitude, and *Trete* the most southern of the two ; with the coincidence of *Trullas portus* being within ten minutes of *Kanè*, and one of the islands opposite *Kanè* called by the author of the *Periplus* " *Trullas*," etc ; it is to say the least of it, strongly to be presumed, that *Trete* was the name of an island or islands, as before suggested ; and that these islands were the group opposite Bunder Hisn Ghorab. Besides we know that if *Trete* were in the same parallel of latitude as *Kanè*, it must have been much more than a degree north of Socotra. Next to Ptolemy's *Trete*, if that was his name for the islands close to *Kanè* or Hisn Ghorab, come his *Insulæ Zenobii*, and then his *Organa*, which must have been the little island of Hammar el Nafur, simply because it is the next, and only one between the Curiyah Muriyah Islands and Masira ; but it is very small, very insignificant, and close to the shore. Then follows his *Sarapidis in qua fanum*, which both from name and sequence is identified with the *Sarapis* of the *Periplus*, and with the Masira, of the present day because there is no other island eastward on this coast.

Last of all Ptolemy's places under the head of *Sachalitarum in sinu* &c. which I shall attempt to identify, are his *Didymi montes*. I cannot pretend to identify his *Neogiala navale* nor his *Hormani flu. ostia*. Gosellin places his *Didymi montes* at Ras el Had, by which he meant the eastern extremity of Arabia, and if Ptolemy's appellation is to be taken literally, that is signifying "twins," his *Didymi montes* are identified in Jibal Saffan, which as before stated, are two mountains close together, almost exactly alike, each about 800 feet high, situated on a table-land about 100 feet above the level of the sea, and isolated for several miles from any other mountains ; not as Gosellin states, the termination of the chain of mountains which passes through Oman, which do not turn from their course to the eastward, to end at Ras el Had, but continue on southwards to terminate in the mountains of Jallan, about twenty miles inland from the S.E. coast of

Arabia. The next place mentioned by Ptolemy, viz. *Bosara*, may have been Sur, because it is said to have been a city, and there is no other locality hereabouts which possesses the advantages of Sur in point of position, both for such external and internal commerce as this part of Arabia could command. There has most probably always been a town where Sur now is, because there is no other place just here, where there could be one so advantageously situated. The subsequent mention of *Vaticinium sive oraculum Dianæ*, *Abisa civitas*, and *Corodomum promont.*, brings us to the straits of the Persian Gulf, where I must also leave Ptolemy.

Before concluding however, it would be as well to see what tribes lived on the Southeast Coast of Arabia in the time of the author of the Periplus. All that we learn from him in this respect, is, that Charibael was king of the Homerites, (Hamyarites), and Sabeans, and that *Arabia felix* was under him; Aden was therefore in the country of the Homerites. The shore between *Arabia felix* and *Kanè*, that is between Aden and Bunder Hisn Ghorab, he tells us, was inhabited by *Nomades* and *Ichthyophagi*, and above *Kanè* was a place called *Sabbatha* where lived *Eleazus*, which was the name of the King who at that time had dominion over the Frankincense Region. Adjoining were the *Atramitæ*, inhabitants of Hadramaut, who were a division of the Sabeans, according to Pliny (lib. xiii. c. xxiv.) and whose region extended to the south-eastern coast of Arabia, *a climace usque Sachalites*, according to Ptolemy. Hence we find as before stated, the country of Hadramaut extending to the *Sachalites* of the author of the Periplus, west of Ras Fartak; and to the *Sachalites* of Ptolemy, east of that cape; and the territories of the Sabeans, through some other People, probably on to the shores of Dofar, and Jibal Sabhan, for the Frankincense Region was under them.

Charibael would appear to have had under him the southwestern angle of Arabia, and *Azania* or part of the Somali country opposite,—that Frankincense Region. While Eleazus had the Frankincense Region of Arabia, for the latter lived in Arabia, at *Sabbatha*, and camels brought the frankincense to *Sabbatha*, which city according to Pliny was eight days journey from the Frankincense Region. Hence Southern Arabia was in all probability then, as it is now, peopled by predatory tribes, while the Homerites and the Sabeans held the trade.

What passed through their country, was for protection, transferred from depot to depot, as we see by the remains of the ancient fortress at Hisn Ghorab (*Kanè*), and another sixty miles inland, up the great valley of Meifah. Moreover, we find that the Gebanites (*Kabayle?*), took toll of all the frankincense that passed through their territory, after the custom of the Beduins of the present day, (see note p. 303). They were all well paid no doubt, and could be, while the Sabeans and Homerites ruled all the commerce of the eastern and western nations that took this course, and which must have always been, as it is now, preferable to that through the Persian Gulf.

The author of the *Periplus*, therefore, mentions the names of no people on this coast but the Homerites, the Sabeans, and the Nomades and *Ichthyophagi*; and it would appear, as Gosellin states, from the little allusion he makes to the Sabeans that the Kings of Hamyar had already, in his time, begun to assume supremacy. Nor does Ptolemy note any more, except the *Ascitæ* and *Sachalitæ*, although he mentions the names of many people who lived in the interior. These *Ascitæ* lived next to *Syagros* mountain on the sea. *Juxta autem Syagrum montem usque mare Ascitæ sunt*; they were evidently called after their vocation, (navigators on inflated sacs,) which happens to be stated by Ptolemy immediately after his mention of *Syagros extrema*, (see p. 305.) His *Sachalitæ* would appear to be no other than the inhabitants of the *suhil* or maritime plain, (see p. 296.) Hence there is little in Ptolemy or the *Periplus* to identify in this respect.

It would be interesting, however, to trace the relationship that exists between the names of places and tribes on this coast and some of those mentioned in the Xth. Chapter of Genesis as the descendants of Shem. To wit the Mahrah, (about whom there is very little known) who claim their descent from the tribe of Ad, (Ad the son of Aws, the son of Aram, the son of Shem?), and who now inhabit the *Aradh el Akaf*, in which the tribe of Ad are said to have settled. The Kathiri, (*Gether?*) who with the Karah inhabit Dofar and the mountainous tract above; close behind which comes the *Aradh el Akaf* before mentioned. The tomb of Houd, (*Heber?*) at Hasek, on the borders of the desert of Akaf. The Karah, Korah, or Koreysh, whose head family is called Kahtan, (*Joktan?*), mixed with the Kathiri and inhabiting Dofar, as well as the mountains

above that district. The Afar, (Ophir?), a large tribe behind the Karah, again towards the desert of Akaf. The province of Hadramaut, (Hazarmaveth?) Saba, (Seba?), etc., are all names which connected with their locality, create an intense desire to know their source. The learned Bochart has done much in this respect, but every step into southern Arabia gives much more to do, and shews us how much more is still behind.

Thus, in conclusion, have we been comparing the south-eastern shores of a country of mountains and deserts; whose inhabitants were once opulent but who are now poor and needy; a country almost without export, yet from this very circumstance, its geographical position, and the undaunted spirit of its inhabitants, destined for a time to become the centre of commerce and one of the richest nations in the world. Without wood for naval architecture, yet with the exception of the European nations, (now, but probably not formerly,) producing the most perfected specimens of this art.¹ The latter probably a consequence of their natural impulse to become the transport agents of produce between the eastern and western nations, the Gerreans from the western shores of the Persian Gulf northwest to Petra; and the Sabeans from the south-eastern angle of Arabia northwards to the same place;² thence to Egypt and to Syria. Joseph was sold to a company of Ishmaelites going down to Egypt with their camels laden with spices. The Queen of Sheba, supposed to have been the Queen of the Sabeans, brought from the "south" to King Solomon, "spices and gold in abundance and precious stones," nor was there "any such spice" or brought in "such abundance" as that "which Queen Sheba gave to king Solomon;" (B. C. cir. 992). The Sabeans possessing the produce of the north-eastern part of Africa besides that of their own country, and the produce which was brought to them from India and the eastern islands, were probably by far the richest people in Arabia. About six centuries after the reign of King Solomon the

1 The lines of the model of the "Batilla," or Pirate Vessel of the Persian Gulf, which was sent home to the Grand Exhibition from this, were considered by competent judges to be almost perfect; and the Arabs themselves have a saying, that the use of the "Batilla" ceased only, when the Steam-Vessel was invented.

2 Heeren Historical Researches, etc. Vol. 2 p. 107.

Homerites ¹ or Hamyarites sprung up, (from Hamyar son of Saba ²), in the south-western angle of Arabia, and they after a time eclipsed the name of the Sabeans. Meanwhile the Thebaic Dynasty fell, and Egypt successively passed into the hands of the Persians, the Macedonians, and the Romans, (30, B. C.) when the latter, influenced by their avarice, and their favourable position, sent an expedition into Arabia to discover the sources from which the Sabeans and Homerites drew their wealth; ³ and a little before the time of the Author of the Periplus, he states, Cæsar destroyed *Arabia felix*, or Aden.⁴ Then followed the overthrow of the Hamyaritic dynasty,⁵ and in the seventh century, arose Mohammedanism; and we see the Arabians one of the richest nations in the world then becoming the most powerful. Egypt was subjected to the Mohammedans, and while their conquests were extending over nearly half the then known world, Arabia was forsaken, the Khalifat was removed to another country, religious fanaticism seems to have usurped the place of her commercial enterprise at home, and subsequently the latter to have slept under the security of the all providing Korân; when the discovery of the passage round the Cape of Good Hope, at the end of the fifteenth century, threw open the commerce of India to the Europeans through a different route, and thus the ancient office of the Arabians ceased. The East India Company was formed, their first hostile collision with the Indians took place at Surat in 1644, and since that the whole country has been subjected to the English. Aden has been seized, the old route of commerce between the eastern and western nations, has again been established, but the Arabs are no longer the carriers of the produce. They have become poor and divided among themselves, the religion of Mohammed is disappearing from among them fast, and they are returning to the heathenism and barbarity of their aboriginal state.

¹ B. C. 370 See Gosellin Op. cit. Vol. ii. p. 112, 113. ² Pocock Spec. Hist. Arab. p. 38.

³ Strabo (Exp. of Ælius Gallus) l. xvi.

⁴ Loc. cit. p. 15.

⁵ The Abyssinians conquered Yaman A. D. 524 and on this occasion the Romans are stated to have lent them 600 vessels to transport their army across the Red Sea to Arabia. (Essai sur l'Histoire des Arabes par A. P. Caussin de Perceval. t. i. p. 134.)

ART. VII.—*An Account of the Agate and Carnelian Trade of Cambay.* By MR. AUGUSTUS SUMMERS, Senior Apothecary at Cambay. Communicated by the Government.

The Agate and Carnelian Trade forms a subject of much interest, although hitherto it has excited little attention, and little desire has been manifested to acquire a knowledge of the varied and complex processes which attend the first procuring of the stones in the rough state, to the ultimate perfection of their finish arrived at by the art of the Lapidary at Cambay. This I shall attempt to detail, and from the following statements of the different Agates and Carnelians, it will be evident, that although they still bear the name of Cambay Stones, and this place has held the reputation for a considerable time of being famed for its agate mines, etc., yet they are really brought here in the rough state from different parts of Guzerat, and are wrought by the Lapidaries here in workshops which have been established for upwards of a century. Although the value of their traffic has been considerably reduced of late years, they still form, next to cloth, the principal articles of commerce, yielding a good profit to the traders, forming a valuable source of revenue to the State, and giving employment to nearly two thousand people, who are engaged in the manufacture of ornaments from them in the busy workshops of this place, amounting in all to about seventy-five large, and twenty-five small.

The traders are Baniyan and Borah merchants, fourteen in number, who purchase the wrought articles from the head lapidaries and send them to Bombay, Djiddah, and other ports.

The workmen or artificers form a distinct corporate body called the *Akkikia Jumat* or *Panchaiyat*, and are designated as follows:— 100 *Akkikias*, master artificers or heads of establishments; 300 *Gasias* or workers on lapidary wheels; 200 *Dholias* or polishers on rough and hard polishing stones; 50 *Pattimars*, or polishers on wooden frames; 100 *Badars* or borers who are employed in the drilling processes; total 750. These form the *Panchaiyat* or regularly consti-

tuted tradesmen ; besides which, upwards of a thousand people are employed in the different shops as day-labourers, in chipping, cutting slabs, &c. these consist of men and boys, both Hindoos and Mahomedans.

The *Panchaiyat* holds the power of adding to their number ; each person on admission pays a few hundred rupees which is spent in dinners. Each department of labour remains distinct, the artisan in one branch will not interfere with, or undertake the work of another branch ; and all enjoy distinct privileges pertaining to their respective departments, needless to notice here.

The following are the stones wrought at Cambay :—

Jasper, Heliotrope, or Bloodstone.—A beautifully variegated stone with a greenish base. The green with flame-like streaks, or red spotted delineations, is named by the lapidary *Lila Chantadar* ; that more variegated with green, red and yellow tints, is named *Pattolia*. It occurs in massive layers, is hard, breaks with a dull fracture, and takes a high polish.

It is procured near the village of Tankarra in the territory of the Murvi Rajah, about twelve miles north of Rajkote, and is brought from the top of the hill named Bang, also from below the hill under the soil, where it occurs in massive layers, from eight ounces to forty pounds in weight.

Remark.—For permission to collect the stone eight annas per maund, (40 pounds), is paid to the Rajah, and two annas per bullock load, for passing through his territory ; four and half rupees per load is paid for bullock-hire to Cambay. A bullock-load contains three maunds, on which a town-duty of eight annas is levied at Cambay.

Moss-Agate.—Named by the lapidary *Sawa Baji*. This is a beautiful species of agate, of a very clear, or clouded, crystalline base ; with impressions of dark green moss, or delineations of reddish brown moss. It is found in massive layers, often cracked in various ways, and is hard and receives a fine polish.

It is procured near the village of Tankarra, in the territory of the Murvi Rajah, and at Bud Kotra about three miles from Tankarra.

It is found in the plain, about two feet under the surface of the soil, in massive layers, cracked, and weighing from eight ounces to thirty or forty pounds.

Remark.—The same as that concerning Jasper. See above.

Agate, Common.—A mineral whose base is chalcedony blended with quartz and carnelian. The white or semitransparent is named *Dhola*, and the cloudy and streaked *Jomma*. Its color is generally a grayish white of different shades. It is pretty hard, brittle, and massive, and receives a high polish. It is procured near the village of Mahidpore three miles from Tankarra, in the territory of the Rajah of Murvi; and occurs in the plain near the surface of the soil in massive blocks, the most perfect not exceeding five pounds; the inferior quality and cracked, as high as sixty pounds in weight.

Remark.—The same as that for the foregoing.

Agate, Kupperwange.—This is a beautiful species of agate; that having the impressions of mineralized plants delicately preserved, with a clear semi-transparent base, is named *Karriah*; that of variegated shades of color, with landscape or other delineations, is named *Aggiah Rutia &c.* It occurs in pebbles or rolled masses, is hard and receives a high degree of polish. It is procured at Kupperwange in the Kaira Zilla, and in the bed of the river Majaim, between the village of Amliala and Mandwah, about fifteen miles from Kupperwange, and is found on the banks and in the beds of rivers in rolled balls of spheroidal, reniform, and amygdaloidal figures, from eight ounces to ten pounds in weight.

Remark.—The Bheels search for the stones, and sell them to a Borah at Mandwah, from whom the lapidaries purchase them at from three to twelve rupees per maund, according to their quality. They are carted or brought on donkies to Cambay. Ten maunds of the stone is valued at one hundred rupees, on which a duty of four rupees and eight annas is charged here.

Agate, Veined.—Named by the lapidary, *Doradar*, of different shades of white with dark streaks, or a dark ground with white thready streaks, assuming different forms.

It occurs imbedded in clayey soil, is hard, and takes a very high polish. It is procured at Rhanpore and its adjacent villages, named Darpipla and Ninama, in the Ahmedabad Zilla near Danduka; and is found under the upper strata of soil, in pebbles of various shapes, not exceeding half a pound in weight.

Remark.—A fee of two rupees per cart-load is paid to the Government authorities, and the stones are carted to Cambay. The cart-load is 40 maunds, which pays a town duty of two rupees here.

Chocolate Stone.—So named from its colour, is also called *Katiak*; It is of a brownish earthy base, not very hard, of a dull fracture, and does not take a high polish. It is procured at Rhanpore, near Danduka, and at Tankarra, in the territory of the Murvi Rajah, and is found on the surface, and a few feet under the soil, in masses from one to eight pounds in weight.

Remark.—It is brought from Tankarra on bullocks, at the rate of rupees $4\frac{1}{2}$ per load, and in carts from Rhanpore, at Rs. 15 per cart-load, besides the Government fee of two rupees per cart-load.

Chrystal.—Named *Phattak*, is a clear transparent stone, resembling glass in appearance, it receives a high polish. It is procured at Tankarra in the territory of the Rajah of Murvi, and is found in masses under the surface of the soil, from one to twenty pounds in weight.

Remark.—This pays the same duty as the other stones in the Rajah of Murvi's territory.

Variegated Stone.—Named by the lapidary *Mi-mariam*, is of a liver brown earthy base, with yellowish impressions of shells and animalcules; having a pretty marbled appearance, but does not receive a good polish. It is procured at Dhokawarra in the Runn, about sixty miles north of Deesa, and is found in large masses on the hill, and dug up in large blocks at its base. From whence it is carted to Cambay.

Lapis Lazuli.—Or the azure stone, named at Cambay, *Rajahwarad*, is of a deep blue colour, and soft earthy base, with a sprinkling of silvery or golden spots. May be known by its beautiful indigo blue colour. It is soft and does not receive a high polish. It is imported

at Cambay from Bombay, and is brought from Persia and Bokhara. It is said to be found in rounded balls in the beds of rivers.

Jet-Stone or Obsidian.—Named here *Kala phattar*, resembles glass in fracture, is not very heavy and takes a high polish. It is imported at Cambay from Bombay, and is said to occur on the hills at Bokhara, and at Aden in large blocks.

Blue-Stone, named *Ferosa*.—It is of various shades of blue, and is a composition resembling glass, it is soft, and takes a good polish. It resembles the true *Ferosa* when highly polished. It is imported at Cambay from Bombay, and is said to be prepared in China. It is brought from China in flat pieces not exceeding half a pound in weight.

Carnelians.—Named *Gharr*, in their original state. They are cloudy, of various shades of brown, some, and others of different tints of yellow. After exposure to the sun and baking, they assume other tints as follows :

Light-brown becomes white, *Dhola*; pale yellow, rose colour, *Gulabi*; deep yellow, red, *Lal*; a mixture of cloudy brown and yellow, becomes white and red, named *Ablaki*; another shade of yellow turns pinkish purple, named *Nafarmani*; and brown becomes a darker shade, named *Emni*.

They are dug up in large quantities, and after undergoing the process of baking, they receive a high degree of polish, and are wrought into flat and round necklaces, bracelets, armlets, stones for seals, chessmen, marbles, studs, rings, &c. They are procured from the base of the hills of Bowa, B. Abbas and Rajpipla in the territory of the Nadode Rajah, who is tributary to H. Highness the Gaikwar. The Nadode Rajah farms the quarries to native contractors, who pay annually, from Rs. 2000, to 2500 to the Rajah, for the sole privilege of collecting the stones. They are found in the shape of pebbles, imbedded in a soft yellow soil or in bluish-gray clay. These vary to a pound weight, and are chiefly of uneven form and surface.

The other stones found in the neighbourhood or on the hills, and not subjected to the heating process are as follows :—

Mora or Bowa Gori.—A species of Onyx or dark coloured Carnelian with white veins; or a grayish white ground with dark veins, assuming various figures, they receive a high degree of polish and are much prized at Djiddah in Arabia. They are procured on the Bowa Gori and Abbas hills or at their base, or in the bed of the river formed by the monsoon streams between the hills. *Mora* is found on, or at, the base of the hills in pebbles not exceeding a pound in weight. Between the Bowa Gori and Bowa Abbas hills, on the plain, are small mounds, from whence the stones are obtained by the Bheels of the districts. The excavations are of some depth, forming galleries in a horizontal direction, about five feet in height and four broad; the miners are obliged to use a lamp and work in pairs, one is employed with the pickaxe in the quarry, the other at the entrance to examine the stones, which is done by chipping off a piece, the good are retained and the bad rejected on the spot. When a larger number of men are employed, the galleries are extended in different directions, with supports and air-passages. The labour of the two men for the day, or for eight or ten hours, produces from ten to forty pounds in weight of Carnelians, which are brought in the evening to the village of Rattanpore, and transferred to the Contractor or his people. When a large quantity is thus procured, they are exposed in the fields to the sun for two months or more, after which in the month of May generally, a trench is formed in the field two feet in depth and three in breadth. In this, fires of goat and cow-dung are lit up, and the stones in earthen pots, in single rows, are placed in the trench; the fire is kept up from sunset to sunrise, when the pots are removed and the stones piled away. The Contractor attends the heating process; the stones are once a year carted to Nemodra, and conveyed in canoes down the river to Broach, from whence they are brought in boats to Cambay.

Each bag of twenty-five maunds, pays a duty of one and a half rupee to the Bombay Government, at Broach, in addition to the import and export duty at Cambay. The stones are sold to the heads of the lapidary-manufactories. The town import duty is one and a half rupee.

Cat's Eye, named Chasumdar.—The principal colour is gray presenting many varieties usually translucent. It is hard, and has the appearance more or less, of a cat's or bird's eye. It is much esteemed and receives a high degree of polish.*

Rori or Lassunia.—A yellow pebble, semi-transparent, found scantily with Cat's Eyes; takes a fine polish and is much esteemed. It is usually cut for ring-stones. These are found on the Bowa Gari and B-Abbas hills, or at their base; or in the bed of the river formed by the rains between the hills, which is dry in the month of October; and they occur with blunt edges or in rolled pieces, as pebbles, and are of various shapes and small sizes, not exceeding two ounces in weight. They are sought for by the Bheels of the district, and disposed of to the Contractor at Ruttanpore who sells them to the heads of the different lapidary manufactories at Cambay.

Articles wrought by the Cambay Lapidaries.—Those for sale to the gentry passing through Cambay, and sent to Bombay for the English, Calcutta, and other markets, are made of Agates, Blood-Stone, and Carnelians; and wrought into models of cannon, with carriages and appurtenances complete; slabs for boxes; sets of a variety of slabs, twenty in number, to form a square table; cups and saucers, chessmen, flower-vases, penracks, card and letter-racks, watch-stands ink-stands, knife-handles, rulers, paper-cutters, paper-weights, penholders; sets of necklaces, bracelets and broaches of a variety of patterns, crochet-needles, silk-winders, marbles, brace and shirt-studs, and seals; also rough specimens of stone with one side polished.

Articles wrought for China, are comprized of only two kinds, and are made entirely of Carnelians. First the oval and square flat-stones resembling watch-seals, large and small named *Mogli gool*, worn as armlets and dress ornaments; second, the beads named at Cambay *Dhol*; each necklace containing fifty beads, these are all plain polished.

* What is called Cat's Eye generally is *Fibrous quartz*; these are not *fibrous quartz* but small globular agates formed of concentric layers. They are very commonly used in Bombay as charms for sore eyes. They are set in copper or silver rings, and are let out or purchased as required. Ed.

and round. Vast quantities of them are annually exported from Cambay, to Bombay for China; the extent of valuation is from 50,000 to 60,000 rupees annually.

Articles for the Mocha, Djiddah, and Mecca markets are made out of the veined Agate from Rhanpore, Carnelians from Rattanpore, the Cat's eye, and Jet or Obsidian; these are worked into large quantities of rings both plain and ornamented, ring stones, wristlets, armlets and necklaces, embracing the following varieties:—

Necklaces:—*Pailudar Dhol*, cut beads; *Gukradar Dhol*, Diamond cut beads; *Badami Arr*, almond shaped necklace; *Khantli*, oblong flat necklace; *Chamakli*, spear shaped; *Madaliyah*, *Tawitch* or *Tahviz*, composed of three stones; *Sadah Khanta*, plain round beads, used as a necklace and rosary.

Armlets and Wristlets:—*Mutia Madaliyah* composed of two stones, worn as an armlet or wristlet; *Paitah*, a wristlet composed of seven round flat stones; *Ponchi*, a wristlet composed of several flat stones; *Baijutah*, an armlet of one stone cut into a fanciful device.

Single stones in the shape of large flat seals called *Ninghul*.

Rings:—These are made of Carnelian of various devices named *Ungotee*; ring-stones for setting, called *Naggina*, are made of Carnelian and Cat's eye.

The articles for the Djiddah and Mocha markets are packed up in Chests, also in bales with cloths, and exported to Bombay, and Veraiwul Bunder near Diu, where they are reshipped to their destination.

Manufacture of the different articles.

Beads.—The following is the process of making Beads:—The stones are first broken into pieces of the size desired. An iron spike named *khondia* is driven into the ground in an inclined direction with one point upwards, the stone is placed on this point, and chipped with a hammer made of horn, till rounded; it is then passed on to the polisher, who fixes a number, of equal size, in a pair of wooden or bamboo clamps, and rubs them on a coarse and hard polishing stone called *Dholia*; these are then transferred to another man, who securing them

in a wooden clamp, rubs them against a grooved polishing board named *pattimar*, on which is smeared a composition of emery and lac, turning the beads round so that every part of the surface might assume a globular form and become polished. The final polish is given, by the beads so prepared, being put from one to several thousands, into a stout leather bag, about two feet in length and from ten to twelve inches in diameter, with some emery dust and very fine powder, named *wurry*, (the sediment from the carnelian deposited in an earthen dish partially filled with water, during the process of drilling holes in the beads, which is always collected and dried,) the mouth of the bag is then tied up, and a flat leather thong or tape is passed round its centre, after which it is rolled by two men seated at opposite ends of a room, towards each other, from ten to fifteen days; during which time it is kept moistened with water. When the beads have taken a bright polish, they are passed on to the people who bore the holes, which is effected by means of a steel drill tipped with a small diamond; during which process the spot is fed with water drop by drop, passed through a thin narrow reed or metallic tube.

The Cut-Beads, are passed from the rough polishing stone to the lapidary-polishing and cutting plate, and lastly the holes are drilled.

Knife Handles. These undergo exactly the same process as the cut-beads and are shaped to any pattern.

Cups and Saucers, and other hollow articles are wrought according to the required external shape on the steel spike, and a rough polish given on the rough polishing stone; the cavity is formed by the diamond tipped drill, to the depth of one fourth of an inch, all over the space until it exhibits a honeycombed surface, when the prominent parts round the holes are then chipped away, and this process repeated, until the depth and form desired is obtained. They are then polished upon prepared moulds of convex formation, and of the same composition as the polishing plates, which are attached to the turning wheel.

Cannon. The bore of the cannon is effected by a drill with two diamonds, to the depth required; afterwards five other drills successively increasing in thickness are substituted, each having, an

increase in the number of diamonds placed circlewise, the last containing as many as twelve diamonds.

Slabs, Paper-cutters P. weights &c.—are cut by means of a toothless saw made of iron; and fixed to a light wooden frame; the cut is fed with emery dust and water; when the stone is small the saw is worked by one man, when large by two men. The stone to be wrought upon is attached to a large wooden frame, which is fixed in the ground. The cement consists of a coarse description of bees wax with the fine fibres of new cloth, by means of which the stones are firmly attached to the wooden frame work. Several men, in a row, are at the same time employed cutting through different pieces of stone.

Table prepared from returns of the Cambay Custom-House, exhibiting the values of the Traffic in wrought Cambay Stones and Export-Duty thereon, for the two official years 1848-49 and 1849-50, commencing in May and ending in April:

	Small Pack- ages.	Large Pac- ages.	Bamboo Baskets.	Large Boxes.	Bags of Carnelians sent in large bales of cloth.		Total value of Carnelians sent each year.		Customs duty on the part of the British Go- vernment.	
	Been- dry.	Kee- sa.	Kem- dia.							
				Patie	Bales	Bags.	Rupees.	a. p.	Rupees.	a. p.
1848-49.....	10	3	13	23	49	312	1,08,423	...	1,350	4 ..
1849-50.....	18	1	11	6	98	536	94,902	...	1,186	4 6

In the above table the export duty levied by the Nawab is not given; the amount exactly trebles that of the British Government, which is calculated at one rupee and four annas per cent. on valuation; this is independent of private fees levied by the Nawab's native officials.

ART. VIII.—*Extracts from the Proceedings of the Society for the year 1849-50.*

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- CHRESTOMATHIE HINDIE ET HINDOUIE a l'usage des Eleves de L'Ecole speciale des Langues Orientales Vivantes pres la Bibliotheque Nationale. Published under the direction of M. Garcin de Tassy. M. Garcin de Tassy.
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- Ditto. ——— Ditto. ——— Ditto. The Govt. of B'bay.
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—— Royal Astronomical, Monthly Notices of, containing papers, abstracts of papers, and reports of the proceedings of, Vol. VIII. from November 1847 to June 1848, with one Supplement. Vol. IX. Nos. 8 and 9, and Vol. X. to May. No. 7.	_____
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(a.) See this Art. Proceedings Off. Lit. and Sc. 18th April 1850. (b.) Id. (c.) Id.

DONORS.

Crocodylus Gangeticus, skin of, from Surat. . .	A. F. Bellasis, Esq.
Dendritic Limestone, portion of taken from a quarry about 30 miles from Neemuch. It is of the same kind as that of the Southern Maratha Country, and is quarried in like manner in large slabs.	Dr. Malcolmson.
Diorite, Magnetic, portion of, (discovered by Capt. Jenkins 10 Madras N. I. See Asiatic Journal, No. CCII. page 410.)	Dr. Spilsbury.
Elephas Asiaticus, portion of tusk of, from the valley of the Nerbudda near Bettaree. (Fos.)	_____
—right side of lower jaw of, (a young animal,) containing a part of the molar tooth. (Fos.)	_____
Geological Specimens collected about Travandrum and Cochin by General Cullen; consisting of Limestones, Lignites, Fossil Resin and Graphite	Dr. Buist.
Hippopotamus, portion of the right jaw of, containing the two posterior molars. (Fos.)..	Dr. Spilsbury.
Iron ore, specimen of, common to the neighbourhood of Saugar.	_____
Janthina and Porpita, specimens of, collected between Bombay and the Cape of Good Hope.	Capt. Montriau.
Laterite, Granite, &c., specimens of, collected from the neighbourhood of Vingorla....	N. A. Dalzell, Esq.
Mineralogical specimens collected at the Mauritius and Aden by Dr. Malcolmson.	Dr. Malcolmson.
Quartz Rock, specimen of cellular, from Shahgurb near Dhamoree, in which is disseminated a large quantity of red and green oxide of Copper, together with crystalline calcareous spar.	Dr. Spilsbury.

DONORS.

- Red-clay, specimens of, possessing a columnar structure, from Trap-Rock, near Kola-poor, collected by Dr. Broughton..... H. B. E. Frere, Esq.
- Rock-specimens, a collection of, from the island of Bombay, consisting of greenstone, traps, basalts, clays and aqueous deposits; also of rocks foreign to the island of Bombay but found on its shores..... Dr. Buist.
- specimens, collected from Maskat in Arabia, Persia, and Babylonia..... Capt. Newbold.
- Salt, specimens of from Kala Bagh.... Col. Hallet.
- Sculptures, fifteen fragments of, procured from a ruined Temple on a hill in the Eusof-Zai country, collected by Lieut. Miller..... Dr. Arnott.
- Talcosed Sandstone, specimen of, light yellow, fine grained, containing here and there small red globular ferruginous concretions of the same material; found 40 miles south of Chandree..... Dr. Spilsbury.
- Talc-Schist, specimens of, containing specular iron ore, collected by Dr. Malcolmson from the hills above Pali, 60 miles north of Peshawar The Hon'ble J. P. Willoughby.
- Trap-Tufa, specimens of, from the island of Bombay. Dr. Buist.
- Woods, specimens of, used at Peshawar for building, and all other purposes requiring timber of a strong and lasting nature; collected by Dr. Malcolmson..... The Hon'ble J. P. Willoughby.

ORIGINAL COMMUNICATIONS.

- Anderson (The Rev. P.) some account by, of the Bhatti Kāvya or Poems of Bhatti. 18th April 1850. (a)

COMMUNICATED

BY.

The Author.

(a.) See last No. of JI p. 20.

COMMUNICATED

BY.

Anderson (The Rev. P.) Some account, together with Fac-simile Devanāgarī transcript and translation by, of a Copper-plate Inscription in the Society's Museum. — 15th August 1850. (a)

Carter (H. J. Esq.) Observations by, on the Serpentine Rocks and Aqueous Strata of Mascat and its Neighbourhood. — 16th May 1850 (b).....

Jacob (Major LeGrand) Fac-similes of Inscriptions in Ancient Sanscrit by, taken from Copper-plates found in the Sawant Wari Territory, with translations. Second contribution.—24th January 1850. (c).....

—————Fac-simile and Translation of a Copper-plate Inscription in Sanskrit by, dated A. D. 1435, recording the Grant of a village called Varadengi, to one Pashun Sheti ; by Nagadew, a descendent of Dewa Sherma.—19th Sep. 1850. (d)

Newbold (Captain T. J.) a descriptive list by, of Rock-Specimens from Maskat in Arabia, Persia, and Babylonia. 24th March 1850. (e)

Perry (The Hon'ble Sir E.) Account by, of the Great Hindu Monarch Asoka, chiefly from the Indische Alterthumskunde of Lassen.— 21st Nov. 1850. (f)

Robertson (Captain A. C.) Memoranda by, on Mud-Craters situated in the District of Lus, with Map and Sketches.—21st Feby. 1850. (g)

Captain S. W. Hart

(a) See this No. of JI. p. 213. (b) See last No. p. 113 (c) See this Art. Proceed. Off. Lit. and Sc. (d) To be inserted in next No. (e) See last No. p. 26. (f) This No. p. 149. (g) See last No. p. 8.

COMMUNICATED
BY.

- Stevenson (The Rev. J., D D.) Observations by
on the Grammatical Structure of the Ver-
nacular Languages of India. No. 2.—21st
Feb. 1850. (a) The Author.
- Summers (Augustus) An account by, of the
Agate and Carnelian Trade of Cambay.—
19th *Sep.* 1750. (b) The Government.
- Taylor (Captain M.) Ancient Remains at the Vil-
lage of Jiwarji near Ferozabad on the Bhi-
ma.—13th *June* (c) 1850..... Dr. Buist.
- Wilson (The Rev. Dr. J.) Memoir by, on the
Cave-Temples and other ancient Buddhist
and Brahmanical and Jaina Remains of
Western India.—15th *Augt.* 1850. (d) .. The Author.
-
- Supplement by, to *Diito.* 19th *Sep.*
1850. (e)

-
- on the Villages and Towns named
Hadhar mentioned in the Sacred Scriptures,
with the identification of the Hazor of Kedar
with the *Hudhra* of the Arab Geographers,
and the *Hatra* and *Atra* of the Greeks and
Romans.—24th *Oct.* 1850. (f)

PROCEEDINGS, OFFICIAL, LITERARY AND SCIENTIFIC.

With reference to Government letter, General Department, No. 276 of 1850, forwarding 26 Gold Coins for the Society's inspection and report, with permission to select such as might be useful in the Society's cabinet, it was resolved, that they should be handed over to C. J. Erskine, Esquire, C. S., with the Society's request that Mr. Erskine would favor it with any observations on them which he might consider worth offering, and also be kind enough to select from them such as might be useful in the Society's collection.

(a) See last No. p. 1. (b) This No. p. 318. (c) *Idem.* p. 179. (d) See last No. p. 36.
(e) See his Art. Proceed. Off, Lit. and Sc. (f) To be inserted in the next No.

The Government letter, General Department, No. 255 of 1850, calling attention to 268 Gold Coins submitted to Mr. Erskine for examination in February last; it was stated, that the papers which had been prepared respecting them were in the possession of Dr. Wilson, *Honorary President*, now in Sindh, and that they would be obtained if possible before his return. The *Secretary* was requested in the mean while to make this reply to the Government.

Major Jacob's fac-similes, etc. of ancient inscriptions before mentioned, were then laid before the Meeting. They are stated by Major Jacob to be of a subsequent date to those of the "Nerur Plates" presented to the Society by Government in the month of June last, and are, respectively, of the years A. D. 933, 1261, and 1391. The Copper-plates from which they were taken are now in the hands of native gentlemen, who refuse to part with them, from a supposition that they possess some mystic virtue.

"No. 1, of A. D. 933, records a grant, in the Shalivahun year 355, by a sovereign of the *Yadu* race Gowindraj, of the village Lohagram in the District of Rampur, to Keshew Dikshit, son of a Brahman fellow-student; the language is pure Sanskrit, but inflated with gigantic hyperbole, puerile conceits, and far fetched metaphors, containing little matter to compensate the labor of finding out the meaning.

"No. 2, of A. D. 1261, shews the Châlûkyàs [after their overthrow by the *Yadu* race] to be again in the ascendant, and reigning at "Kalyân,"—Kanwadew the King—his Minister, Keshew Mahājani, bestows the village Terwatak, the modern Terwun in the Rajapoor Talooka, on certain Brahmuns, and the deity Vinaleshwar; the latter said still to enjoy his portion. The Sanskrit is not grammatical; the character approaches much nearer to the modern type; the inscription is probably the same as that of which an imperfect copy and translation are given in the R. A. Society's Journal, Vol. V, page 177.

"No. 3, of A. D. 1391, is an interesting relic of the Beejanuggur dynasty, founded, according to Ferishta in A. D. 1344, by Bilal Dew, Raja of the Carnatic, who named it after his son Beeja * * * * This inscription gives only, the following genealogy: Achyut married to *Shree—Bukkaraj—Harihar*; the first named is not spoken of as

a sovereign, but the second is. * * * * In alluding to Wigaya, it says, that Bukkaraj here lived as an Indra, defying all his enemies ; and as no mention is made of Achyut's deeds, or residence, the inference is that Bukkaraj was the first of the race who established himself in power in this quarter. Harihar is described as ruling over the whole of the Indian Peninsula, that is washed by the ocean ; and it seems doubtful whether supremacy to the Indus be not claimed ; his Prime Minister, the aforesaid Madhawa, whom he invested with the sovereignty of Jayantissur, conquered Goa from the Turushkas (Turks), and re-established there the worship of the ancient idols which they had uprooted. This victorious personage, before transferring control over the Goa country to another Minister, named Narahari, granted to the parties named in the plates the village of Kuchchar, called also Madhawpur : this village, the modern Kochré, is not many miles from the present Goa frontier."

Dr. Buist in presenting the collections of Geological specimens before noticed, accompanied them with many interesting observations, more particularly as regards the specimens collected from the Island of Bombay. The several localities and extent of the Basaltic eruption, the positions of the Greenstone, White Trap, Trap-Tufa, and their varieties, were pointed out ; also the localities of the aqueous deposits, consisting of the Kankar formation, Blue Clay with its Lignites, &c. and the Shell-Concrete, all of which Dr. Buist conceives to belong to the Newer Pleiocene series.

Among the rocks foreign to Bombay, Dr. Buist would, as far as his observations extend, place the Laterite, there being no doubt about the others, which have been brought to Bombay by ship as part of their ballast.

Of the specimens forwarded to Dr. Buist by General Cullen, Dr. Buist could state nothing but on conjecture, further than that which was contained in the list which accompanied them. The collection was extremely interesting, inasmuch as it contained specimens of Lignite, Mineral Resins, and Graphite, said to come from the Laterite formation ; the latter from Trevandrum, the former from the Late-

rite deposits about fifteen miles S. of Quilon. They are found in common with Carbonaceous Clays and Pyrites, and, according to General Cullen, appear to extend all along the coast from Cape Comorin to Cannanore. Captain Newbold had noticed them at the latter place and at Baypore. They would also appear to be confined to the coast and shores of back waters, sometimes occurring on a level with the sea, at others on high laterite cliffs, as at Purkolly.—*2nd January, 1850.*

The letter from Cursetjee Jamsetjee Esq., (Secretary to the Committee appointed on the 25th April 1841, to carry into effect certain resolutions respecting a testimonial to the memory of the late Sir James Carnac,) having reference to a bust of Sir James Carnac now standing in the northern landing place of the Town Hall, requests, on behalf of the Committee, that the Society will do it the favor to receive this bust and its pedestal into the Library, as a temporary measure.

The *Secretary* was requested to acknowledge the receipt of this letter, and to express the Society's willingness to comply with the Committee's request.

Respecting the Gold Coins before noticed, presented by the Government, and those by Colonel Jervis, it was resolved that, the former should be handed to C. J. Erskine, Esquire, C.S., and the latter to the Rev. Dr. Stevenson, with the Society's request that these gentlemen would, respectively, favor the Society with a description of them.

In reply to the letter from J. Henry, Esquire, Secretary to the Smithsonian Institution, Washington, presenting the society with the Reports and Volume before mentioned, also requesting in return a complete set of the Society's publications; it was resolved that the best thanks of the Society should be transmitted to the Board of Regents of the Smithsonian Institution for the valuable presents referred to; and that a copy of each No. of the Society's Journal already published, as well as a copy of all Nos. hereafter published by the Society should be sent to the Smithsonian Institution.

The Reports of this Institution state, that it originated in a bequest of property to the amount of \$ 515,169 by James Smithson, Esquire

of England, in trust to the United States of America, to found an Institution at Washington in the testator's name, which Institution was to have for its object, *The increase and diffusion of knowledge among men*. This trust was accepted by the Government of the United States, and the Institution established by Act of Congress August 10th, 1846.

The volume alluded to, is on the "Ancient Monuments of the Mississippi Valley:" it is the first of the "Smithsonian contributions to knowledge."

Mr. Smith, in adverting to the deficiencies in the Society's Library, stated, that among the list of Subscribers to "Layard's Nineveh" were the Hon'ble the Court of Directors for 40 copies, and that the Society might, in all probability, be presented with a copy from this source, if it would only take the trouble to apply for it. The *Secretary* was requested to make an application through the proper channel to this effect.

Further, Mr. Smith wished to know what had been done in the way of procuring a better supply of books for the Society since the last resolutions were passed relative to this subject.

The *Secretary*, in reply, stated that the *Committee of Management* had determined on meeting once every three months for the purpose of making selections from such Standard Works as might be recommended for the Library, and that the resolutions referred to, having come into operation on the first of the year, the meeting of the *Committee* alluded to would be held in the month of March.

Dr. Stevenson stated that he thought it advisable, for the purpose of insuring a systematic selection, to call upon each member to send in a list of the Standard Works in which he might think the Library most deficient, and that these lists should be brought before the meeting of the Committee mentioned. The *Secretary* was requested to make arrangements accordingly.

The following communication was made to the Society by Dr. Buist respecting the Laterite on the shores of Bombay: "I mentioned, in explaining the character of the specimens presented at last meeting, that it was doubtful whether the Laterite lying in blocks and pieces around Sewree might not have been brought thither by

the hand of man. I now no longer entertain any doubt about the matter, I find pieces of Laterite strewed all around the shores of the Island; at Sewree, Worlee, Lovegrove and Breach Candy; and on the shores of Salsette, Trombay and Elephanta, and all around the Islands of Henery and Kenery; and I have no doubt it will be found over a large expanse all up and down over our coasts. It is mentioned by Prinsep as existing in the blue clay at Calcutta, exactly as it does in our blue clay here, only that it is 150 feet under the surface. It was brought up in boring for water in 1837. Whatever may have been its transporting cause, it could not, under these circumstances, have been an artificial one. Within the Tropics we do not recognise the agency of Glaciers or Icebergs at the level of the sea.

Laterite is so hot and brittle, and so easily destroyed by the agitation of the waves, and these fragments are mostly found within the reach of the breakers, that it must, at no great distance of time, have been much more plentiful than at present. A few years hence, in all likelihood, every trace of it will have vanished from our shores, unless beyond the reach of the sea. I found some specimens of tuffa, in addition to those formerly presented, which may form a set of themselves illustrative of trap disturbed or flowing in a viscid state when in the act of cooling. Most of these are stratified or streaked; in some of them the spar which usually fills drusy cavities or veins has already come into existence amongst fragments of hard or semi hard matter not quite in contact with each other. I have lived most of my lifetime in the midst of trap-formations yet the phenomena here are altogether new to me."—*21st February, 1850.*

The Rev. J. M. Mitchell read an extract of a letter from Dr. Graul of Leipsic, containing a strong request that the Bombay Branch of the Royal Asiatic Society would aid in the rendering into English of the Gujaráti versions of the Zendavesta as one important contribution towards the elucidation of the Zend text. After some discussion, the following resolution was unanimously agreed to,—viz., "That the desirableness of having an English translation of the Gujaráti version and the commentary of Framjee Aspandiarji on the Zendavesta having been brought forward, the Society fully recognizes the importance of the proposal, and resolves to discuss it more fully at its next meet-

ing; appointing in the mean time the Rev. Dr. Stevenson, Rev. J. M. Mitchell, C. J. Erskine, Esq., and H. Green, Esq., to consider and report on the whole question."—21st March, 1850.

The Committee appointed to report on the question of rendering into English the Gujarati version of the Zendavesta, by Framjee Aspandiarji, reported, that after full inquiry, it was convinced of the desirableness and practicability of the scheme, but as several modes of carrying it into execution had been suggested, they would beg permission to report on this specific point to a future meeting. The Society agreed to the report and continued the Committee.

Tables which had been drawn out by C. J. Erskine Esq., relative to the inscriptions and dates of the Gold Coins, submitted for description to the Society by the Government, with its letters No. 346, 276, and 572, dated respectively, 7th February 1849, 19th January and 15th February 1850, were laid before the Meeting with the following observations on those which accompanied the letter No. 346.

"There are 263 of these Coins and they are of three kinds, viz.—I, Fanam or Fulum, 261 Pagodas or Nand, and 6 Mohurs.

There is only one Fanam, of Annesgoondee, which seems to be correctly described in the list attached to the Collector's letter.

There are 6 Mohurs, which are described in the first appended lists

The remaining 261 Coins are Pagodas. They are of one or other of the following kinds. *Dharwaree, Hurlpunhullee, Yekeree, Mohammed, Shahee, and Savanooree*. But there are several species included in some kinds, especially in the *Yekeree* and *Savanooree*. Some information on these details is given to the second appended list.

All these kinds of Pagodas are mentioned in Prinsep's list, but not all the species.

This kind of Fanam is not mentioned."

The Society expressed its thanks to Mr. Erskine for the great trouble he had taken, and requested the *Secretary*, after having had copies made of the Tables to forward the originals to Government with all the Gold Coins, excepting those which, by the kindness of Government, the Society had been allowed to select for its own Cabinet. (See p. 333.)

The Antique Coins presented by Colonel Jervis, *Vice-President*, to

the Society, at its Meeting held on the 21st February last, (See p. 333.) and subsequently submitted to the Rev. Dr. Stevenson for examination, have been thus described by that Gentleman :

“ There are 2 Bactrian Coins of Menander with Greek and Bactrian Inscriptions ; 3 Rajput Coins, two of which are of Sri Samugur Deva, and the other Sri Syalapa Deva. The copper Coins, (one Indo-Scythian of four different types,) are described, as well as the silver ones, in Wilson's *Ariana Antiqua* as far as I have examined them.”

Dr. Buist exhibited a large mass of specular iron ore, containing plumbago, from Southern India ; also a piece of lignite from the blue clay of Sewree ; and compared the formation of sulphate of iron in the latter with that of the lignites found on the Malabar Coast near Cochin.—18th April, 1850.

Fifteen fragments of sculpture, procured from a ruined temple on a hill in the Eusofzai country, by Lieut. Miller, 1st Fusiliers, were presented to the Society by Dr. Arnott, Surgeon of the same Regiment.

In Dr. Arnott's letter which accompanied these interesting remains, it is stated, that the hill on which they were found is on that part of the Eusofzai country which borders on Suwat, and not far from Sergao, the scene of operations of Brigadier Bradshaw's Force in December 1849.

There appears to be no traditionary account of this temple among the neighbouring inhabitants, and the sculptures, which have a strong Grecian style seem to shew from the manner in which they are fractured, that the Temple was intentionally destroyed.

It was resolved that these remains should be handed over, with Dr. Arnott's letter, to the Rev. Dr. Wilson, *Honorary President*, with a request that Dr. Wilson would favor the Society with any account that he could obtain respecting them.—13th June, 1850.

The following letter from John Ritchie, Esq. having been read, the *Secretary* was requested to acknowledge the receipt of it, and to express the Society's best thanks for the readiness with which the

Directors of the Peninsular and Oriental Steam Navigation Company had complied with the Society's solicitation.

No. 71 of 1850.

Bombay, 22d June, 1850.

To H. J. CARTER, Esq., *Secretary B. B. R. A. Society.*

SIR—Referring to your communication of the 13th April, I have the pleasure to inform you, that the Directors of this Company have agreed to allow the monthly transmission by this Company's Steamers to Alexandria, free of expense, of a small packet of books, for the Bombay Branch of the Royal Asiatic Society.

I have the honor to be, &c.

(Signed) JOHN RITCHIE, *Supt.*

---18th July, 1850.

The Honorable Sir Erskine Perry's letter enclosed one to his address from Dr. Blyth, Curator of the Museum of Natural History at Calcutta, relative to the deficiency of specimens from the Western side of India, which exists in that Museum.

Mr. Blyth states, "we hardly possess a specimen at present from the Western side of India, rich as we are in the productions of most other parts of the country, from the Himalayas to Ceylon inclusive, and also of the regions lying eastward of the Bay of Bengal.

"I wish that you could introduce me to some one in the Western Presidency who takes sufficient interest in the Natural History of the country, to procure for me certain zoological *desiderata*, for which I should be happy to reciprocate in any way, by doing my best to supply whatever may be wanted from this part.

"Among the Mammalia, I particularly wish for the perfect skeleton, or skull only, and skin prepared for stuffing, of the *Ghorkhar* or Wild Ass of Cutch, Sindh, &c., for comparison with the Tibetan *Kyang*, which I believe to be the same animal.

"I also want the entire skeleton, if possible or skull with teeth, of the beaked Dolphin of the Indus, which is a distinct species from the Gangetic *Soosoo*.

"Likewise specimens of the Wild Sheep and Goats of the Sulimani mountains, and extreme N. W. Himalayas.

"Again, we want skulls of both sexes, and skins for mounting of the Asiatic Lion. We have the perfect skeleton and the well-mounted skin of an African Lion from Algiers. Another Feline animal I want is the true Cheeta, or Hunting Leopard, *F. Jubata*, skin and skeleton.

"Among the smaller Mammalia the Bats would be particularly acceptable."

"Of birds, I want much to see collections from Mahabuleshwar and from Sindh; and I would return such collections, labelled, if kindly lent to me. I have drawn up a list of the birds of India generally, Burmah and the Malayan peninsula, including those of Sindh, so far as I know them, and of Assam, Ceylon, the Nicobars, &c. &c. But my knowledge is very limited of those of the Bombay Presidency.

"In other classes, I need only say, that specimens of Reptiles, Fishes, and Crustacea in spirit, are most acceptable; as also of Shells, whether marine or land, and freshwater. I could spare a collection of most of our Bengal Shells from my own private stock, and should be glad to send them to whoever would undertake to supply me with the Bombay species."

Sir Erskine Perry regrets, that there is no allowance made by Government for enabling the Society to obtain a Curator for its Museum, in order that the whole of the Natural History of this part of India might be at once brought under the eye of its European and Native population, both for instruction, and ultimately for the advantage of the country.

The Secretary was directed to inform Sir E. Perry, that Mr Blyth's letter should be handed over to the Museum Committee, with a request that they would make any exchanges with Mr. Blyth which might be mutually advantageous to both Museums.

In Dr. Buist's letter was also enclosed one to his address from Patrick Chalmers Esq., M. P. for Arbroath stating, that Mr. Chalmers had directed two copies of his magnificent work on the Sculptured Monuments of Angus to be forwarded to Dr. Buist's address; one of

which, on their arrival in Bombay, Dr. Buist intimated his intention to present, at Mr. Chalmer's suggestion, to the Society.

The following is an extract from Mr. Chalmer's letter relative to these monuments :

"I am much pleased to hear that these Monuments have excited some little curiosity in India. It is from the East that I have always looked for some explanation of the symbols on the earliest monuments, some of which may possibly date before the introduction of Christianity into Britain. I confess that the strong resemblance that some of the figures bear to those on Abraxas, leads me rather to the belief, that gnosticism was mixed more or less with our Christian faith, in these Islands at some time; and it is recorded in the Chronicle of Lanercost, that in the 13th century, the rites of Bacchus were openly celebrated by the Parish Priest of Inverkeithing; though it is also recorded that, the knife of some of the disgusted parishioners exacted the penalty of his misdeeds ere many months elapsed. What you mention of the supposed discovery of Druidic remains in India is very interesting. I should like much to see drawings of them. A friend of mine here thinks, he has traced the relation between the Runes and Oghams of Ireland, and Britain, and Scandinavia, and the Rock inscriptions of Asia Minor, and the arrow-headed characters of Babylon &c, and that he can read the one by the other. I observe that an Armoric student has arrived at a like conclusion independently. Both, however, are deficient in the knowledge of eastern languages, and the same value cannot attach to their lucubrations as to the coincident and independent discoveries of Dr. Hincks and Major Rawlinson. However, the proofs of the ancient course of Eastern Commerce, afforded by the discovery of Cufic coins and Asiatic ornaments, weapons, &c. prepares one for a connection, more or less, in letters."—*15th August, 1850.*

With reference to letter No. 890, dated 22nd ultimo, from H. B. E. Frere, Esq., Commissioner at Sattara, forwarding a list of Sanskrit Books which are in a Temple at Sattara, and offering to procure copies of any of them which the Society may think worth procuring, it was resolved—"that Mr. Frere's letter and accompaniment be circulated for the observations of those Members who are engaged

in the study of Oriental Literature, and that the Secretary be requested, in the mean time, to acknowledge their receipt, with the Society's best thanks, and to inform Mr. Frere of the Society's proceedings respecting his kind offer."

The Sanskrit Inscription and Translation, before mentioned, by Major LeGrand Jacob, forwarded in Government letter No. 3891, dated 19th ultimo, for any remarks the Society might have to offer on it, was handed over to the Rev. Dr. Stevenson, with the Society's request, that Dr. Stevenson would favour it with any observations which he might consider the subject to deserve.

The letter dated 22nd June last from Richard Clarke, Esq., *Honorary Secretary* of the Royal Asiatic Society, announces the dispatch to the Society's address, through Mr. Richardson, of some copies of the Society's revised Regulations; also states that henceforth all non-resident Members of the Society will be required to pay an annual contribution of one *Guinea*, in consideration of receiving the Journal.

The *Secretary* announced the publication of the XIIIth No. of the Society's Journal.

The Rev. Dr. Wilson, President of the Commission appointed for obtaining authentic information relative to the number and situation of the Monuments and Cave-Temples of Antiquity in the Territories under the Bombay Government, stated, that he had completed his "Memoir" on those remains of antiquity; which had been printed in the No. of the Society's Journal above noticed; and that 60 extra copies had been struck off, in anticipation that the Government would take them for distribution to the principal local authorities, in order that descriptions of any Cave-Temples or other Monuments of antiquity of the Presidency, which were not enumerated therein, or might have been since discovered, might be communicated to the Commission.

The *Secretary* was requested to address the Government accordingly, and to state the views of the Commission regarding further proceedings in these interesting inquiries.

Dr. Wilson read the following Supplement to his "Memoir :"—

"In my Memoir notice has been taken of several *structural temples*

in different parts of the country which appear to be 'coeval with the excavated temples, both Buddhist and Brahmanical. Of one of the latter description, first discovered, I believe by Vishnu Shastri, who reported its existence to Mr. Law, and situated in the Taluka of Kalyan, I have the pleasure, in consequence of Dr. Gibson's attention, of exhibiting to the Society several illustrative drawings. It is decidedly of a *Shaiva* character; and though originally built of the most substantial material, it has been considerably injured by the hand of violence, and has long ago lost its sacredness,—one of the many illustrations of the fact noticed in the 'Memoir' under the head of *Elora*, that the form of religion which the oldest Shaiva temples embodied has vanished from the Mahratha country, probably on withdrawal from it, by a change of sovereignty, of the patronage of the Chola Rajas, by whose influence it seems almost certain, the ancient Brahmanical excavations and Jhaina structural Temples were constructed. In this temple there is a *trimurti*, or three-headed Shaiva, proved without doubt to be of this god, not merely from the general representations of the Shaivas, which attribute creation, preservation, and destruction to their favourite deity, but from the embracement in its unity of *Parvati* the spouse of Shiva. The figure, strange to say, is not only monstrous, but from its multiplex and factitious heads and skeleton legs, of as grotesque and deformed a character as can be conceived. It is singular that its breasts in front seem ornamented with *clerical bands*; an authority for such appendages which will not add greatly to the dignity of our associations connected with their use. The efforts of the Hindu artist were probably directed to the representation of that gravity and austerity by which Shiva, as the prince and patron of ascetics is characterized; but he has ultimately made greater demands on the visible than the devotional faculties. The *beau ideal* of his nasal organ, one is almost tempted to believe, to have been the tortured and contorted proboscis of some inveterate snuffer!

At the close of the last meeting of our Society, one of the members, Captain French, mentioned to me, that he had observed an excavation in Khandesh, of which he had not noticed any published account. He has had the goodness to write to Lieut. J. Rose, now

in that province, for more information respecting it. While it turns out to be of an insignificant character, the inquiries made in connexion with it have led to the discovery of a small series, of Buddhist caves, with a *Chaitya*, which are possessed of very considerable importance. The following is an extract from the narrative of the visit of Mr. Rose to, and inspection of, these caves.

"When within less than eighty yards of the caves, it was almost impossible to believe the guide that the excavations he described were so near, though he pointed to the exact spot. The ravine is much grander, and the approach to the caves wider than at *Ajanta* and there were evident marks of their being frequented by wild beasts; but although I was quite prepared for all comers, not even a bear showed itself.

"I have spoken of the *caves*; but only one excavation deserving the name is remaining.

"This exactly resembles some of those at *Ajanta*.

"The arched roof and pillars covered with paintings of human figures &c., are just the same. The figures are very distinct in many instances, and women and men seem to be mixed. There is nothing about them unchaste; and in general they have circles, or what are sometimes called "*glories*" round their head, similar to those given in the fancied *representation of our Saviour*.

"One drawing struck me particularly, in which a female is represented with long ringlets, just as ladies sometimes dress their hair in our own time. This figure was quite fair, and yet close to it was a very dark female likeness of the *Habshi* caste of features, with very black curly hair.

"The stone here was much more brittle than at *Ajanta*, or *Elora*; and consequently some of the pillars are broken and the excavators failed in their attempt to represent arched rafters, as they succeeded in doing at *Ajanta*, for the same reason.

"The other three caves here are in fact nearly blocked up, from the rock falling down from above. One of them, however, on your descending into it over the fragments of rock, is in tolerable preservation, though none of them appear to have been quite completed, as is also the case at *Razah* and *Ajanta*. Where the rock had given

way, before the chisel, the masons had neatly substituted stone, and this is the case at Razah as I or rather Colonel Twemlow observed.

"In the painted cave, the paintings are plastered over with a coating of chunam.

"The only sculptures are two or three representations of elephants, tigers, bullocks, and deer, or goats, cut out in small dimensions back to back, like our lion and unicorn.

"There may have been other sculptures and inscriptions; but if there ever were, they have fallen into the ravine below, as the rock is constantly giving way.

"These caves, the guide, an old man, said, were never visited by a 'Sahib' before, though Marathas and even Brahmans come to see them and bathe in the river below. While I was there, it began to thunder and grow cloudy, and I got wet through, but I do not regret my visit to the *Pepolhow*, and should like to repeat it. I am going to see if there are any more caves in the hills of which we have not heard. I wonder how it is that none have been found in *Satpuda* yet. No natives of this country could, I think, have drawn the cave-paintings. The Greeks, or Italians, must have helped them; and indeed at Elora there is a woman's figure cut out in stone of such fair proportions as to shew that it is the work of an artist quite superior to those who executed the bulk of the unwieldy figures there.

"In the new caves I am alluding to, there is a neatness in the little sculptures I have mentioned."

These interesting notes of Mr. Rose, Dr. Wilson observed, do not throw any light on the comparative age of these Buddhist excavations. It would be well if the paintings which they bring to light could be speedily copied.

The explanation of the peculiarities of the female figures which are noticed is not difficult. As the Buddhist religion in the ages of its glory prevailed not only throughout India, but throughout the countries lying north of its boundaries, and beyond the Indian Caucasus, and Tartary and Tibet, its *Buddhas* and *Dhyani Buddhas*, and their female productions or associates, the *Dhyani Bothi Satwas*, are frequently represented as attended by devotees and servitors of

varied clans and colour. *Buddha* himself, and the *Dhyani Buddhas* and *Bodhi Satwas*, in their typical form, as seen in India, Nepal, Ceylon, Burmah, Siam, Pegue, China, and Tartary, are depicted and sculptured with curly hair and rather large lips, which the Buddhists, according to a strange taste, enumerate among the points of beauty. Mr. Hodgson of Nepal, when examining the learned priest, whose answers form the substance of his most interesting and highly valued, 'Sketch of Buddhism,' put to him the question 'What is the reason for *Buddha* being represented with curled locks?' and received the following answers—'*Addi-Buddha* was never seen. He is merely light.' But in the pictures of *Kairochina*, and the other *Buddhas*, we have the curled hair; and since in the limbs and organs we discriminate thirty two (*lakshanas*) points of beauty, such as expansion of forehead, blackness of the eyes, roundness of the head, elevation of the nose, and archedness of the eyebrows; so also the having curled locks is one of the points of beauty; and there is no other reason for *Buddha's* having been represented with curled locks.' Mr. Hodgson adds in a note:—'This is the true solution of a circumstance which has caused much idle speculation: though the notion is no doubt an odd one for a sect which insists on tonsure.' The colours of the five *Dhyani-Buddhas* are as follows:—"*Kairochina's* appropriate colour is white; *Akshobya's* blue; *Ratno Sambhava's* yellow or golden; *Amirabha's* red; and *Amogha Siddaha's* green. Those of their respective *Bodhi Satwas* are correspondent.

It is to be hoped that Mr. Rose will be able to explore a considerable part of the *Satpuda* range, which has hitherto been much neglected. The connexion with it from time immemorial of the Aboriginal *Bhils* who have submitted neither to Brahmanism nor Buddhism, but who have so long preserved the Turcoman worship of ghosts and demons, is no reason why we should not expect to find within it considerable numbers of Buddhist Monks, who could easily conciliate by their largesses the wild sons of the Indian forest, as well as the monks of the eastern Churches, who could conciliate the roving sons of the Egyptian, Syrian, and Arabian deserts."—19th September, 1850.

The following letter from H. B. E. Frere, Esq. Commissioner, Sattara, was read :—

No. 1031 of 1850.

To H. J. Carter, Esq., *Secretary B. B. R. A. Society.*

SIR,—I have the honor to forward per Bhangy Dawk, a Manuscript Volume of Arabic and Persian Inscriptions from Bejapoor, collected and copied by Hoosein Sahib Bhangay and Mahommed Ali Bhangay, Rogendars of Bejapoor, two of the few Mahommedans belonging to the place who possess a competent knowledge of Persian, and some acquaintance with Arabic.

2. These gentlemen assure me that they have taken great pains to make the collection full and accurate, and I can testify to their great industry and zeal in hunting out many inscriptions which had previously been unnoticed. They have thus been enabled to add a very great number of inscriptions to those noticed by Doctor Bird, in his paper on the subject published in the Society's Transactions. Some of them appear very curious and well worth preserving, and I trust that the zeal of these Gentlemen in collecting such a contribution towards the antiquarian history of their native place, may be considered worthy the favorable notice of the Society.

3. There are in the ruins of the Citadel at Bejapoor, near the Eastern gate, 10 or 12 long and very distinct Canarese Inscriptions, of only a few of which Mr. Walter Elliot, the great authority on Canarese antiquities, procured abstracts. They are cursorily noticed by Doctor Bird. I have hitherto been unable to get complete or trustworthy copies, owing to the difficulty of finding any one sufficiently acquainted with the ancient Canarese dialect to transcribe them. But as they probably, like all such inscriptions, contain valuable historical data, it would be very desirable to get perfect and accurate copies or impressions of them, and if forwarded to Mr. Walter Elliot, no doubt, good use would be made of any information they contain. The letters, though very clear, are so small, and the stone so uneven, as to defy all the attempts I made to get a good impression; but they are evidently easily legible by any one who understood

the old dialect of Canarese, and possibly by giving publicity to the fact that they exist, and that accurate copies would be acceptable to the Society, some Canarese Scholar visiting the place might secure copies.

Sattara 24th }
Sept. 1850. }

I have the honor to be, &c.

(Signed) H. B. E. FRERE.

Resolved :— That Mr. Frere be requested to state to the Society, in what manner they can best express their thanks to Hossein Sahib Bhangay and Mahommed Ali Bhangay for the manuscript, volume of Arabic and Persian inscriptions from Bejapoor, and whether a present of books would be appreciated.

With reference to M. Moirot's letter, accompanying the XIIth Vol. of the "*Bulletin de la Societe de Geographie*" it was resolved : That it should be acknowledged with the Society's best thanks, and the Nos. of the Society's Journal applied for therein, forwarded to the Parisian Geographical Society, by the earliest opportunity, with a request, that the preceding Nos. of that Society's Journal, might be presented to the Bombay Branch of the Asiatic Society in return.

A similar resolution was also passed respecting the request of the Imperial Academy of Sciences at St. Petersburg, and the *Secretary* directed to forward a complete set of the Society's Journal to the address of the Perpetual Secretary.

The letter from Government relative to taking off the Society's hands the extra copies of the Honorary President (Dr. Wilson's) "*Memoir on the Cave-Temples, &c.,*" and complying with the Society's request, that they might be distributed to the parties named by the Society, for the purpose of eliciting still further information on these monuments of Antiquity in Western India; also intimating the desire of Government to reimburse the Society for any expense incurred in endeavouring to carry into effect the wishes of the Hon'ble the Court of Directors in this respect,—was handed over for reply to the Commission appointed by the Society to direct their attention to this subject.

In return for the valuable MS. volume of Arabic and Persian

Inscriptions collected at Bejapoor, and presented through H. B. E. Frere, Esq. Commissioner for Sattara, at the last meeting, it was resolved :—That as Mr. Frere coincided with the Society, (in the suggestion above mentioned) that a present of books to the gentlemen who collected these inscriptions would be highly appreciated,—the Rev. Dr. Wilson be requested to expend a sum not exceeding Rs. (100) one hundred, to be laid out in the purchase of Arabic or Persian works for this purpose.

The Rev. Dr. Wilson brought forward a successful oil painting and sketch of some groups of figures in the Caves of Elephanta by Mr. Fallon, whose talents the Society considered richly deserving of of the countenance and encouragement of Government in portraying the beautiful remains of these ancient caves.—*24th October 1850.*

ANNIVERSARY MEETING.

Monday, the 25th November 1850.

The minutes of the last Meeting having been read and confirmed : the following gentlemen were elected for the Committee of Management, Museum-Committee, and Auditors of the ensuing year viz :—

Committee of Management.

C. J. ERSKINE, Esq.	W. HOWARD, Esq.
S. S. DICKINSON, Esq.	J. SMITH, Esq.
H. YOUNG, Esq.	J. PATTON, Esq.
Lt. Col. J. HOLLAND.	A. H. LEITH, Esq.
C. MOREHEAD, M.D.	Rev. P. ANDERSON.

Museum-Committee.

C. J. ERSKINE, Esq.	CAPT. C. W. MONTRIOU,
H. J. CARTER, Esq.	A. H. LEITH, Esq.
H. CONEYBEARE, Esq.	CAPT. J. G. FORBES.

Auditors.

Col. G. MOORE.	A. SPENS, Esq.
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It was proposed by Capt French, seconded by Captain Forbes, for consideration, at the next Meeting :—" That the annual subscription be reduced to Rs. 60, from the 1st January next."

Captain French seconded by Alexander Burn, Esq. also moved—" That the Committee of Management be requested to report on the best mode of proceeding to obtain the permission of Government, for transferring the Library and Museum of the Society to the large Room of the Town Hall, and the expense which would attend it."

The " Cape Town Mail " from the 1st January 1851, was ordered to be added to the list of Periodicals.

ERRATA.

Page.		Line.		read
213		6	" The reare	— There are.
243		13	" <i>Macrocephalus</i>	— <i>Macrocephalus</i> .
250	Foot-note	3	" Mahara महारा	— Mahrah. महारा
265		37	" Saiyad	— Said.
251.		11	" Mahara	— Mahrah.
---	Foot-note	"	" महारा	— महारा
290		5	" <i>Trallas</i>	— <i>Trullas</i> .
291		30	" Makadahah	— Makdahah.
		31	" "	— "
		33	" <i>Kané</i>	— <i>Cuna</i> .
294		21	" Ras l' Assidah	— Ras el Asidah.
342		14	" not	— soft.
337		19	" <i>Hadhar</i>	— <i>Hazor</i> .
337		20	" <i>Hadhra</i>	— <i>Hadhar</i> .
349		12	" <i>Mahratha</i>	— <i>Maráthá</i> .
"		15	" <i>Jhaina</i>	— <i>Jaina</i> .
"		29	" visible	— risible.
350		36	" <i>Razah</i>	— <i>Rozah</i> .
351		21	" <i>Razah</i>	— <i>Rozah</i> .
"		15	" <i>Pepolhow</i>	— <i>Pipulkhora</i> .
"		34	" <i>Bothi</i>	— <i>Bodhi</i> .
352		10	" <i>Addi</i>	— <i>Adi</i> .
"		11	" <i>Kairochina</i>	— <i>Vairochana</i> .
"		22	" "	— "
"		"	" <i>Ratno Sambhava's</i>	— <i>Ratna Sambhava's</i>
"		23	" <i>Amirabha's</i>	— <i>Amitabha's</i> .
"		"	" <i>Amogha Siddha's</i>	— <i>Amogha Siddha's</i> .
"		30	" <i>Turcoman</i>	— <i>Turanian</i> .

NOTE TO THE ARTICLE ON ASÓKA.

Sir Henry Elliot in his valuable Supplemental Glossary, p. 78, points out a passage in Abúl Fázl which describes the removal of the Delhi Lat from a town in the district of Uansi. I learn also by an interesting communication from that distinguished scholar, that he has discovered an inscribed column 18 miles southwest of Simla, the characters of which appear to be Thibetan, and which will probably turn out to be another monument of Asóka.—E. P.